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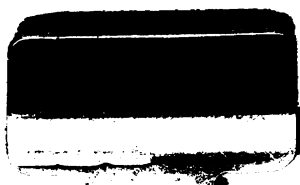
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WM. A. SPRINGER.

WISCONSIN FREE LIBRARY COMMISSION.

ANNUAL REPORT

OF THE

Wisconsin State Horticultural Society

FOR THE YEAR 1897.

Annual Meeting at Madison, February 2, 3, 4 and 5, 1897.

Semi-Annual Meeting at Omro June 22 and 23, 1897.

VOLUME XXVII.

A. J. PHILIPS, Secretary,

WEST SALEM, WIS.



MADISON
DEMOCRAT PRINTING COMPANY, STATE PRINTER

1897

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COMMISSION

1875

LETTER OF TRANSMITTAL.

To Hon. EDWARD SCOFIELD.

Governor of Wisconsin.

DEAR SIR—I have the honor of presenting to you as is required by law the twenty-seventh annual report of the transactions of the Wisconsin State Horticultural Society, embracing the papers read and the discussions on the same at our yearly meetings, one of which was held in the city of Madison in February and the other in the village of Omro in June. We have also published reports from local societies located in different parts of the state, which show a lively interest in horticulture in these localities. We also give the amount of money received from the state and the disposition of the same during the year. Our plant distribution to the children has been suspended for this year, but will most likely be resumed again. Our trial orchard, located and planted at Wausau last year, has had some additions this season and promises to be a very useful institution, especially to the farmers of northern Wisconsin if they will only avail themselves of the information to be gained there.

A. J. PHILIPS,

Secretary.

West Salem, July, 1897.

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CONSTITUTION AND BY-LAWS.

CONSTITUTION.

ARTICLE I. This society shall be known as the Wisconsin State Horticultural Society.

ARTICLE II. Its object shall be the advancement of the art and science of horticulture throughout the state.

ARTICLE III. Its members shall consist of *annual* members, paying an annual fee of one dollar, which shall entitle the wife of such member to the privileges of full membership; of secretaries of local horticultural societies reporting to the state society, who shall be considered members *ex-officio*; or *life* members, paying a fee of ten dollars at one time; of *honorary life* members, who shall be distinguished for merit in horticultural and kindred sciences, or who shall confer any particular benefit upon the society; and *honorary annual* members, who may, by vote, be invited to participate in the proceedings of the society.

ARTICLE IV. Its officers shall consist of a President, Vice-President, Recording Secretary, Corresponding Secretary, Treasurer, Superintendent and an Executive Board, consisting of the foregoing officers and additional members, one from each congressional district of the state, five of whom shall constitute a quorum at any of its meetings. In addition to the foregoing officers, the presidents of all local horticultural societies reporting to this society shall be deemed honorary members and *ex-officio* vice-presidents of this society. All officers shall be elected by ballot, and shall hold their office for one year thereafter, and until their successors are elected; provided, the additional executive members may be elected by the county or local horticultural societies of their respective districts.

ARTICLE V. The society shall hold its annual meeting for the election of officers, commencing on the first Monday in February. It may also hold a meeting in December of each year, at such place and time as may be decided upon by the society, or the executive committee for the exhibition of fruit and for discussions, and such other meeting for discussions and exhibitions as the executive committee may direct, at such time and place as the executive board shall designate.

ARTICLE VI. This constitution, with the accompanying by-laws, may be amended at any regular meeting by a two-thirds vote of the members present.

AMENDMENT NO. 1.

The foregoing article four of the constitution was amended at the annual meeting, February, 1895, to read: The president, vice-president, treasurer, secretary and corresponding secretary shall be the executive committee of the society; also, that three of the aforesaid committee shall constitute a quorum to transact business.

BY-LAWS.

I. The president shall preside at meetings, and, with the advice of the recording secretary, call all meetings of the society, and have general supervision of the affairs of the society, and shall deliver an annual address upon some subject connected with horticulture.

II. The vice-president shall act in the absence or disability of the president, and perform the duties of the chief officer.

III. The secretary shall attend to all the correspondence, shall record the proceedings of the society, preserve all papers belonging to the same, and superintend the publication of its reports. He shall also present a detailed report of the affairs of the society at its annual meeting. He shall also endeavor to secure reports from the various committees, and from local societies of the condition and progress of horticulture in the various districts of the state and report the same to the society. It shall be the duty of the secretary to make an annual report to the governor of the state of the transactions of the society, according to the provisions of the statutes for state reports.

IV. The treasurer shall keep an account of all moneys belonging to the society and disburse the same on the written order of the president countersigned by the secretary, and shall make an annual report of the receipts and disbursements, and furnish the secretary with a copy of the same on or before the first day of the annual meeting. The treasurer elect shall, before entering upon the discharge of the duties of his office, give good and sufficient bonds for the faithful performance of his duties subject to the approval of the executive committee.

V. The executive board may, subject to the approval of the society manage all its affairs and fill vacancies in the board of officers; three of their number, as designated by the president, shall constitute a finance committee.

VI. It shall be the duty of the finance committee to settle with the treasurer and to examine and report upon all the bills or claims against the society which may have been presented and referred to them.

VII. The standing committees of this society shall be as follows: 1st, Committee on finance, consisting of three members; 2d, Committee on nomenclature and new fruits, consisting of three members; 3rd, Committee on observation, as now provided. Said committee to be appointed annually by the executive committee of the society.

ACT OF RE-ORGANIZATION

AND LAWS RELATING TO THE

STATE HORTICULTURAL SOCIETY.

CHAPTER 151, LAWS OF 1879, AS AMENDED BY CHAPTER 14, LAWS OF 1887.

SECTION 1. The executive committee of the Wisconsin State Horticultural Society shall hereafter consist of the president, secretary and treasurer of said society, and of one member from each congressional district of the state, said members from the congressional districts to be chosen annually by the county and local horticultural societies in the respective districts.

SECTION 2. The present officers and executive committee of said society shall hold their respective offices until the Tuesday next succeeding the first Monday in February, 1880, and until their successors are appointed.

SECTION 3. It shall be the duty of said society to aid in the formation and maintenance of county and local horticultural societies, to promote the horticultural interests of the state by the holding of meetings for discussion; by the collection and dissemination of valuable information in regard to the cultivation of fruits, flowers and trees adapted to our soil and climate, and in every proper way to advance the fruit and tree growing interests of the state.

SECTION 4. The annual meeting of the society for the election of its officers, the transaction of general business, and the consideration of questions pertaining to horticulture, shall be held at such time and place as may be determined at the last preceding annual meeting. In case of the failure of such meeting to so determine, the executive board may call such meeting by giving at least thirty days' notice to each member of the society.

SECTION 5. All vacancies in the offices of said society may be filled by the executive committee; and should there be a failure to elect a

member of the executive committee in any district, the vacancy may be filled by a two-thirds vote of the members of the society present at any regular appointed meeting.

SECTION 6. It shall be the duty of the secretary of said society to make an annual report to the governor of the state of the transactions of the society, including an itemized account of all moneys expended during the year, in addition to such matters as are now specified in the law relating to the same.

CHAPTER 526, LAWS OF 1889.

SECTION 5. And further, there shall be printed annually upon the approval and order of the commissioners of public printing, ten thousand copies of the transactions of the Wisconsin State Agricultural Society, the same to embrace the reports of the county and other agricultural societies, and such matters pertaining to the agricultural industries of the state as shall be deemed important, provided the whole number of printed pages shall not exceed four hundred. Seven thousand copies of the transactions of the Wisconsin State Horticultural Society, the same to embrace such abstracts of reports of county and other horticultural societies, and such matters pertaining to the horticultural interests of the state as shall be deemed important, provided that the whole number of printed pages shall not exceed two hundred. Eight thousand copies of the transactions of the State Dairymen's Association, the same to embrace such other matters pertaining to the dairy interests of the state as shall be deemed essential, provided that the whole number of printed pages shall not exceed two hundred. Twelve thousand copies of the report of the Agricultural Experiment Station of the State University, provided that the whole number of printed pages shall not exceed two hundred and fifty. Two thousand copies of each of said reports to be bound separately in cloth, all others singly in paper.

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Horticultural Society, ten copies to each county agricultural society, and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of each of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university; to the governor, lieutenant-governor, secretary of

state, state treasurer, attorney general, state superintendent of public instruction, railroad commissioner and insurance commissioner, twenty-five copies each; to the state superintendent of agricultural institutes, fifty copies; to the superintendent of public property, commissioner of labor statistics, adjutant-general, quartermaster general, state board of health, each ten copies; to each public library in the state, two copies; to each state normal school, two copies; to each of the state charitable and penal institutions, one copy; and the remaining copies to the respective societies for distribution by their secretaries.

SECTION 7. In no case shall the number of printed pages in any report provided for in the act exceed the maximum number specified, except upon written request of the officers submitting the same, and then only upon previous written approval of a majority of the commissioners of public printing, such application and approval to be filed with the secretary of state.

CHAPTER 417, LAWS OF 1889.

SECTION 1. The governor is hereby authorized to set apart by proclamation one day in each year to be observed as a tree planting or arbor day, requesting all public schools and colleges to observe the same by suitable exercises, having for their object the imparting of knowledge of horticulture, in the department known as arboriculture, and the adornment of school and public grounds.

SECTION 2. This act shall take effect and be in force from and after its passage and publication.

Approved, April 16, 1889.

Resolved by the Senate, the Assembly concurring, That the governor be and he hereby is authorized to have full control of all office rooms in the capitol, and to assign to each office or department such room or rooms as in his judgment may be required for the transaction of the business of the respective department, and for the proper care and preservation of the records and property.

All laws interfering with this resolution are hereby repealed.

This resolution shall take effect and be in force from and after its passage and publication.

In accordance with the above the governor has set apart Room 207 for the use of the Horticultural Society.

CHAPTER 148, LAWS OF 1895.

AN ACT to appropriate a sum of money to the Wisconsin State Horticultural Society.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. There is hereby appropriated the sum of fifteen hundred dollars out of the general fund annually, to the Wisconsin State Horticultural Society, and five hundred dollars to establish an additional experiment station.

SECTION 2. Chap. 117, of the laws of 1893, is hereby repealed.

SECTION 3. This act shall take effect and be in force from and after its passage and publication.

Approved April 8, 1895.

CHAPTER 339.

SECTION 3. There shall be printed seven thousand copies of transactions of Horticultural society, four thousand of which shall be bound in cloth, provided, the whole number of pages shall not exceed two hundred and fifty.

CHAPTER 239, LAWS OF 1897.

SECTION 1. Chapter 148, of the laws of 1895, is hereby amended so as to read as follows: There is hereby appropriated the sum of fifteen hundred dollars out of the general fund annually, to the Wisconsin State Horticultural Society, and two hundred and fifty dollars annually for the maintenance of experiment stations.

SECTION 2. This act shall take effect and be in force from and after its passage and publication.

Approved April 14, 1897.

MEMBERS OF THE SOCIETY.

LIFE MEMBERS.

Geo. J. Kellogg.....	Janesville, Wis.
F. W. Loudon.....	Janesville, Wis.
H. S. Woodruff.....	Janesville, Wis.
Mrs. Ida E. Tillson.....	West Salem, Wis.
Mr. Geo. Raymer.....	Madison, Wis.
Prof. E. S. Goff.....	Madison, Wis.
A. D. Barnes.....	Waupaca, Wis.

HONORARY LIFE MEMBERS.

O. S. Willey, ex-Secretary.....	Madison, Wis.
F. W. Case, ex-Secretary.....	Chicago, Ill.
Prof. Wm. Trelease.....	St. Louis, Mo.
J. S. Stickney, ex-President.....	Wauwatosa, Wis.
A. G. Tuttle, ex-President.....	Baraboo, Wis.
B. F. Adams.....	Madison, Wis.
F. K. Phoenix.....	Delavan, Wis.
J. C. Plumb.....	Milton, Wis.
Peter M. Gideon.....	Excelsior, Minn.
J. S. Harris.....	La Crescent, Minn.
E. H. S. Dartt.....	Owatonna, Minn.
C. G. Patten.....	Charles City, Iowa.
M. E. Hinkley.....	Marcus, Iowa.

ANNUAL HONORARY MEMBERS.

Prof. Otto Luggen.....	St. Anthony Park, Minn.
Prof. Samuel B. Green.....	St. Anthony Park, Minn.
Prof. F. W. Taylor.....	Lincoln, Neb.
Prof. J. L. Hartwell.....	Dixon, Ill.
H. F. Thurston.....	Chicago, Ill.
John Corse.....	Racine, Wis.
Miss Lillian M. Kayser.....	Milwaukee, Wis.
Jonathan Perriam.....	Chicago, Ill.

LIST OF MEMBERS FOR 1897.

By resolution the wives of the members are Honorary Members of the society.

Abbott, Chas.	Appleton, Wis.
Alsmeyer, C. E.	De Forest, Wis.
Babcock, Edward	Sparta, Wis.
Burnham, M. H.	Waupaca, Wis.
Buck, J. P.	Appleton, Wis.
Bernet, E. J.	La Crosse, Wis.
Babcock, O. W.	Omro, Wis.
Carroll, R. C.	St. Anthony Park, Minn.
Campbell, Vie H.	Evansville, Wis.
Cripps, Elon	Columbus, Wis.
Chappell, F. H.	Oregon, Wis.
Converse, D. C.	Fort Atkinson, Wis.
Coe, R. J.	Fort Atkinson, Wis.
Case, J. E.	Eau Claire, Wis.
Crocker, A. S.	Ripon, Wis.
Drake, W. H.	Lake Mills, Wis.
Dolton, Chas. A.	Dolton, Ill.
Dawson, W. J.	La Crosse, Wis.
Edwards, A. J.	Fort Atkinson, Wis.
Edwards, F. C.	Fort Atkinson, Wis.
Floyd, H.	Eureka, Wis.
Fridt, J. A.	Koro, Wis.
Fisk, J. L.	Omro, Wis.
Greene, R. C.	Albion, Wis.
Hitt, Geo. C.	Rosendale, Wis.
Hatch, A. L.	Rhaca, Wis.
Holmes, W. H.	Waupaca, Wis.
Hanchett, Will	Sparta, Wis.
Herbst, John L.	Sparta, Wis.
Hall, John R.	Viroqua, Wis.
Hoxie, B. S.	Evansville, Wis.
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Hartley, J. R.....	Onalaska, Wis.
Hardin, F. A.....	Weyauwega, Wis.
Hirschinger, Chas.....	Baraboo, Wis.
Harris, H. H.....	Warrens, Wis.
Houser, J. F.....	Onalaska, Wis.
Huntley, Dan'l.....	Appleton, Wis.
Huffman, Jacob.....	Monroe, Wis.
Humphrey, E.....	Omro, Wis.
Hazen, D. L.....	Eau Claire, Wis.
Johnson, Franklin.....	Baraboo, Wis.
Kellogg, L. G.....	Ripon, Wis.
Kroll, Will.....	Omro, Wis.
Loope, T. E.....	Eureka, Wis.
Muth, Carl M. D.....	Sheboygan, Wis.
McCray, E. G.....	Shamrock, Wis.
Menn, J. J.....	Norwalk, Wis.
Meixner, John.....	North Bristol, Wis.
Moyle, W. J.....	Yorkville, Wis.
McKerrow, Geo.....	Sussex, Wis.
McCaulay.....	Montreal, Ontario, Canada.
Ovenden, F., 502 Mills St.....	Madison, Wis.
Philips, A. J.....	West Salem, Wis.
Pingrey, Sennet.....	Omro, Wis.
Parsons, A. A.....	Eureka, Wis.
Porter, J. W.....	Oakland, Wis.
Porter, A. H.....	Oakland, Wis.
Reed, L. H.....	Grand Rapids, Wis.
Rice, Miles.....	Milton, Wis.
Rilley, A. S.....	Pardeeville, Wis.
Remmington, O. T.....	Amy, Wis.
Stammer, Wm.....	South Osborne, Wis.
Storandt, Wm.....	Burr Oak, Wis.
Schumaker, Edward.....	Hilbert, Wis.
Seymour, A. N.....	Mazomanie, Wis.
Smith, B. H.....	Tiffany, Wis.
Single, Edd.....	Wausau, Wis.

MEMBERS.

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Spry, John.....	Fort Atkinson, Wis.
Searles, J. D.....	Sparta, Wis.
Scott, L. E.....	Neenah, Wis.
Scofield, E. J.....	Hanover, Wis.
Smith, G. B.....	Green Bay, Wis.
Simon, A. H.....	Sawyer, Wis.
Stark, Frank.....	Randolph, Wis.
Smith, I. C.....	Green Bay, Wis.
True, John M.....	Baraboo, Wis.
Troxell, Grace.....	Omro, Wis.
Tanner, Thos.....	Omro, Wis.
Trevelen, J. D.....	Omro, Wis.
Tichenor, W. M.....	Waupun, Wis.
Tong, Geo. M.....	Sturgeon Bay, Wis.
Toole, Wm.....	Baraboo, Wis.
Tobey, C. E.....	Sparta, Wis.
Tarrant, Henry.....	Janesville, Wis.
Wurl, Henry L.....	Mayville, Wis.
Williams, Daniel.....	Summit Center, Wis.
Wolcott, Frank.....	Appleton, Wis.

BUSINESS CARDS OF MEMBERS, 1897.

Abbott, Chas., Appleton, small fruit grower.

Almeyer, E. C., De Forest, nurseryman and seed grower.

Barnes, A. D., Waupaca, Arctic nursery and fruit farm.

Case, J. F., Eau Claire, small fruit grower.

Chappell, F. H., Oregon, grower and dealer in nursery stock.

Coe & Converse, Fort Atkinson, nursery stock and small fruits.

Edwards, F. C., Fort Atkinson, small fruits and nursery stock.

Edwards, A. J., Fort Atkinson, nursery and small fruits.

Hardin, F. A., Weyauwega, small fruit grower.

Hatch, A. L., Ithaca, Hill Crest Fruit Farm.

Harris, H. H., Warrens, Oak Hill Berry Garden.

Hanchett, Will., Sparta, small fruit grower.

Hazen, D. L., Eau Claire, small fruit grower.

Herbst, John L., Sparta, seed potatoes and seedling strawberries.

Hill, Geo. C., Rosendale, small fruits and Guernsey cattle.

Hirschinger, Chas., Baraboo, orchardist and nurseryman.

Houser, John F., Onalaska, small fruits and vegetables.

Johnson, Franklin, Baraboo, small fruits and orchard.

Kellogg, L. G., Ripon, small fruit a specialty.

Kellogg, Geo. J., & Sons, Janesville, Belle Cottage Fruit Farm.

Loope, I. E., Eureka, orchard and small fruits.

Loudon, F. W., Janesville, originator of Jessie Strawberry and Loudon Raspberry.

McCray, E. G., Shamrock, small fruits a specialty.

McKerrow, Geo., Sussex, importer and breeder of mutton sheep.

Plumb, J. C., Milton, nursery and small fruits.

Phillips, A. J., West Salem, Mount Zion Nursery & Fruit Farm.

Parsons, A. A., Eureka, orchard and small fruits.

Phoenix, F. K., & Son, Delavan, nursery and small fruits.

Reed, L. H., Grand Rapids, seed potatoes a specialty.

Scofield, E. J., Hanover, small fruit grower.

Seymour, A. N., Mazomanie, small fruits.

Smith, I. C., Green Bay, vegetables and small fruits.

Spry, John, Fort Atkinson, grower of small fruits and plants.

Stammer, Wm., South Osborne Columbian Experimental Nursery.

Tuttle, A. G., Baraboo, small fruits.

Tobey, C. E., Sparta, Thayer Fruit Farm.

Toole, Wm., Baraboo, pansy specialist.

Wurl, H. L., Mayville, small fruits.

WISCONSIN STATE HORTICULTURAL SOCIETY.

OFFICERS AND EXECUTIVE COMMITTEE FOR 1897.

L. G. KELLOGG, President.....	Ripon.
WM. TOOLE, Vice-President.....	Baraboo.
A. J. PHILIPS, Secretary.....	West Salem.
R. J. COE, Treasurer.....	Ft. Atkinson.
W. J. MOYLE, Corresponding Secretary.....	Yorkville.

COMMITTEES FOR 1896.

ON TRIAL ORCHARD.

Ex-Officio, the President and Secretary.

J. D. SEARLES, Sparta.....	For one year.
PROF. E. S. GOFF, Madison.....	For two years.
EDD SINGLE, Wausau.....	For five years.

NOMENCLATURE.

J. C. PLUMB.....	Milton.
A. A. PARSONS.....	Eureka.
B. S. HOXIE.....	Evansville.

LEGISLATION.

CHAS. HIRSCHINGER.....	Baraboo.
R. J. COE.....	Ft. Atkinson.
PROF. E. S. GOFF.....	Madison.

FINANCE.

FRANKLIN JONHSON.....	Baraboo.
F. C. EDWARDS.....	Fort Atkinson.
W. J. MOYLE.....	Yorkville.

REVISION OF FRUIT LIST.

GEO. J. KELLOGG.....	Janesville.
WILL HANCHETT.....	Sparta.
J. L. HERBST.....	Sparta.

RESOLUTIONS.

VIE H. CAMPBELL.....	Evansville.
D. C. CONVERSE.....	Ft. Atkinson.
A. L. HATCH.....	Ithaca.

SUPERINTENDENT OF EXHIBITS.

FRANKLIN JOHNSON.....	Baraboo.
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FIELD TRIALS.

PROF. E. S. GOFF.....	Madison.
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BADGES.

VIE H. CAMPBELL.....	Evansville.
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OBSERVATION.

A. S. ROBINSON.....	Centralia.
J. L. FISK.....	Omro.
J. BONNELL.....	Eau Claire.
F. A. HARDEN.....	Weyauwega.
E. A. RICHARDSON.....	Sparta.
A. J. EDWARDS.....	Ft. Atkinson.
E. SINGLE.....	Wausau.
PROF. E. S. GOFF.....	Madison.
JOHN MENN.....	Norwalk.
W. D. BOYNTON.....	Shiocton.
DANIEL WILLIAMS.....	Summit.
FRANKLIN JOHNSON.....	Baraboo.
MILES RICE.....	Milton.
A. L. HATCH.....	Ithaca.
F. H. WOLCOTT.....	Appleton.
W. A. WILCOX.....	La Crosse.
WARREN GRAY.....	Darlington.
LELIA ROBBINS.....	Platteville.
W. J. MOYLE.....	Yorkville.
D. E. BINGHAM.....	Sturgeon Bay.
M. A. THAYER.....	Phillips.

To the Members of above Committee:

You have been appointed to make observations in the localities where you reside, note changes as the season advances, note first blos-

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soming of tree fruits, damages by frosts and droughts, acreage of fruits, and as near as possible give amount received for fruits at your railroad stations. Give results in top working if it is practiced to any extent, make a short concise report of the fruit business, whether it is on the increase or otherwise. If you have a local society, if so how many members have you in state society. Get your report in by January 1st, 1898. We like to hear from all of our committees, as the reports interest the society.

A. J. PHILIPS,

Secretary.

FRUIT LIST.

FRUIT LIST.

Pears—Flemish Beauty, Early Bergamot, Keifer.

PLUMS.

American varieties—De Soto, Cheney, Wolf, Rockford, Miner (if top grafted), Hawkeye, Fountain Garden, Wyant.

European varieties for lake region—Abundance, Green Gage, Lombard, Field, Hudson River, Purple Egg, Moore's Arctic.

CHERRIES.

Hardest—Early Richmond.

Kentish—English Morello.

For trial—Wragg, Bessarabian.

STRAWBERRIES.

For shipment—*Warfield, *Crescent, Enhance, Wilson, Parker, Earle, Van Deman, Sandoval, Splendid.

For near markets—*Bubach, *Haverland, Greenville, *Crescent, *Warfield, Wood, Enhance, Jessie [on certain soils].

For home use—Jessie, *Bubach, *Warfield, *Crescent, Parker, Earle.

For furnishing pollen to imperfect flowering kinds—Parker Earle, Jessie, Wilson, Wood, Enhance, Van Deman, Saunders, Capt. Jack, Rio, Wolverton.

Late—Eureka, Gandy, Parker Earle, Brandywine, Enhance.

Early—Wood, *Crescent, Van Deman, Warfield, Rio.

For trial—Sparta.

Note.—The best sites for apples, cherries, plums, pears and grapes in Wisconsin, are elevated limestone soils, not too rich, and free from untimely spring frosts, or places under the influence of bodies of water. Plant those kind that are succeeding best on soils and sites similar to the one to be used; plant but few kinds with different kinds near each other, rather than in large blocks, and thus secure better fertilization of bloom; to prevent injury by insects and parasitic fungi spray and give good cultivation before July 1st each season.

Note.—Those marked with an asterisk have imperfect flowers and should be planted near those having perfect flowers.

APPLES.

NAME.	SIZE.	FORM.	SHADED SIDE.	SUNNY SIDE.	CALYX.	STEM.	CAVITY.
Antonovka.	Large	Med con. ribbed	Greenish yellow	Yellowish brown	Partly open	Short	Yellow russet
Avista.	Medium to large	Roundish conical	Green	Yellow	Partly open	Medium, stout	Broad, shallow
Arabka.	Large	Flat, conical	Dark green	Dark red	Open	Long, thin	Deep, russety
Charlamoff.	Large	Flat, roundish	Greenish	Yellow, dark brown	Closed	Long and thin	Deep and russety
Eureka.	Medium to large	Roundish, flat	Greenish yellow	Dark red	Open	Short, stout	Broad, shallow
Fall Orange.	Medium to large	Roundish	Pale yellow	Brownish, with dots	Large and partly closed	Short	Deep and narrow
Fall Spitzenberg.	Medium to large	Round and conical	Greenish yellow	Crimson, with dots	Closed	Medium in length	Wide and very deep
Fameuse.	Medium	Round, flattened	Pale red	Deep red	Small	Short and small	Narrow, funnel like
Golden Russet.	Medium	Roundish, oblate	Golden russet	Yellowish russet	Nearly closed	Short and small	Deep
Hibernal.	Large	Flat and round	Dull red	Striped red	Large, closed	Short, stout	Broad, deep
Longfield.	Medium	Flat, conical	Light green	Reddish yellow	Half open	Long, thin	Deep, smooth
Lusk Queen.	Medium	Model	Bright red	Faded white	Closed	Short, stout	Deep, regular
McMahan.	Large	Round, conical	Yellowish white	Reddish blush	Large, open	Long, stout	Broad, deep
Newell.	Large	Round, flat and conical	Lemon yellow	Orange blush	Closed	Stem short	Deep
N W. Greening.	Large	Round, conical	Green	Yellowish blush	Mostly closed	Medium	Large, russeted
Oldenburg.	Large	Round, oblate	Streaked red	Yellow and red	Large, closed	Short, stout	Broad
Patten's Greening.	Medium to large	Round, oblate	Waxen yellow	Faint blush	Large, closed	Short	Broad, deep
Pewaukee.	Medium to large	Round, conical	Greenish yellow	Reddish streaked	Closed	Short	Shallow
Plumb's Oider.	Medium	Round, conical	Reddish green	Green streaked	Closed	Short	Narrow
Raspberry.	Small	Flat, conical	Greenish yellow	Carmine	Closed	Long, thin	Deep yellow

BASIN.	FLESH.	USE AND VALUE—SCALE 1 TO 10.			SEA-ON.	TREE.	ORIGIN.
		Dessert.	Cooking.	Market.			
Deep ribbed	Greenish, white, firm	5	5	8	Early winter	Medium hardy	Russia
Broad, shallow	Very white	5	10	5	Winter	Hardy	Wisconsin
Ribbed, irregular	White and firm	5	7	5	Early winter	Medium hardy	Russia
Flat and irregular	Greenish and tender	4	6	5	Fall	Medium hardy	Russia
Broad, deep	Yellowish white	4	5	5	Winter	Hardy with age	Wisconsin
Deep and narrow	White, tender	6	8	5	Late fall	Hardy	Massachusetts
Narrow and abrupt	White and tender	7	7	6	Late fall	Medium hardy	Vermont
Narrow, small	Very white	10	4	8	Late fall	Hardy	France
Deep, round, open	Yellowish white	7	5	8	Winter	Hardy	Massachusetts
Broad and shallow	White	4	6	4	Late fall	Hardy	Russia
Ribbed, wavy	White, fine grained, firm	6	6	5	Winter	Medium hardy	Russia
Shallow	White, firm	6	4	6	Fall	Hardy	Russia
Small, abrupt	White, fine grain	6	10	10	Late fall	Very hardy	Wisconsin
Rather deep	White, tender	8	6	5	Winter	Hardy	Wisconsin
Small, irregular	White, tender	6	8	6	Winter	Hardy	Wisconsin
Broad, regular	Juicy, white	6	10	10	Early fall	Very hardy	Russia
Large, closed	White, firm	6	7	6	Early winter	Hardy	Wisconsin
Shallow, irregular	Yellowish, white	6	7	8	Winter	Medium hardy	Wisconsin
Broad, deep	White, firm	5	5	5	Late fall	Medium hardy	Wisconsin
Narrow ribbed	Greenish, white	8	4	7	Fall	Medium	Russia

APPLES—Continued.

NAME.	SIZE.	FORM.	SHADED SIDE.	SUNNY SIDE.	CALYX.	STEM.	CAVITY.
Scott's Winter.	Small	Round, conical	Dark red, striped	Yellowish red	Closed	Short	Small, deep
Tetofaki.	Medium	Oblate, conical, round	Reddish yellow	Whitish bloom	Closed	Short, stout	Narrow, deep
Walbridge.	Small	Flat, round	Whitish yellow	Pale reddish green	Small, closed	Short	Medium
Wealthy.	Medium to large	Round, oblate	Yellowish crimson	Dark red, striped	Partly closed	Short, medium, slender	Green, russet
Willow Twig.	Medium	Round, conical	Light yellow	Dull reddish	Partly closed	Short, slender	Narrow, deep
Wisconsin Russet.	Medium	Round, oblate	Yellow russet	Dark russet	Half open	Short	Broad, regular
Windsor Chief.	Medium	Round, oblate	Dull yellow	Dull red	Partly closed	Short	Regular
Wolf River.	Very large	Roundish, oblate	Reddish white	Pale green, yellow	Open	Very short	Large, greenish
GRABS.							
Transcendent	Medium	Roundish, oblong	Yellow crimson	Red cheek	Closed	Long, slender	Open, deep
Hyalop.	Large	Roundish, oblate	Light red	Dark red	Closed	Long, slender	Open, deep
Sweet Russet.	Large	Round, conical	Light yellow	Dark yellow.	Small, closed	Long, slender	Broad, deep
Whitney No. 20.	Medium to large	Round, conical	Golden yellow	Reddish crimson	Partly closed	Medium, slender	Broad, deep
Gibb.	Large	Round, oblate	Light yellow	Golden yellow	A little open	Short	Deep
Martha.	Large	Round, flat	Light red	Dark reddish	Closed	Medium	Shallow
Virginia.	Medium	Round, oblate	Light yellow	Reddish yellow	Closed	Long	Shallow

BASIN.	FLESH.	USE AND VALUE—SCALE 1 TO 10.			SEASON.	TREE.	ORIGIN
		Dessert.	Cooking.	Market.			
Broad, deep	White, firm	6	5	5	Winter	Hardy	Vermont
Small, corrugated	White juicy	5	7	6	Summer	Very hardy	Russia
Small, plaited	White, fine, tender, juicy	1	7	5	Winter	Hardy	Illinois
Deep, uneven	Reddish white, fine grained	10	10	10	Early winter	Hardy	Minnesota
Broad, shallow	Yellowish green, hard	5	5	7	Winter	Medium hardy	Unknown
Irregular	Yellowish white, firm	4	5	5	Winter	Medium	Wisconsin
Regular, broad	White, half tender	5	5	5	Winter	Medium	Wisconsin
Large, very deep	White, coarse	6	6	8	Late fall	Hardy	Wisconsin
Shallow	Creamy yellow	6	5	5	Summer	Hardy	
Broad, shallow	Yellowish white	4	5	5	Early winter	Hardy	
None	Mellow, tender	8	8	8	Autumn	Hardy	Wisconsin
Deep	Tender, white, juicy	10	7	7	Autumn	Hardy	Illinois
Broad, shallow	Rich, yellow	5	5	5	Autumn	Hardy	Peffer, Wis
Broad, shallow	White, firm	8	7	6	Late autumn	Hardy	Minnesota
Shallow	White, juicy	5	6	5	Late autumn	Very hardy, best for top working	Russian wild crab Budd.

GRAPES.

For market vineyards—Moore's Early, Worden, Concord, Brighton, Delaware.

For home use—Moore's Early, Worden, Brighton, Delaware, Massachusetts, Moore's Diamond, Lindley.

Late keepers—Wilder, Lindley, Vergennes, Merrimac, Agawam.

Early—Moore's Early, Early Victor.

White Grapes—Pocklington, Niagara, Green Mountain.

BLACK RASPBERRIES.

Nemaha, Gregg, Ohio, Older, Kansas.

Early—Palmer.

RED RASPBERRIES.

Marlboro, Cuthbert, Shaeffer.

For trial—Columbia, Loudon.

BLACKBERRIES.

Snyder, Briton, Stone's Hardy, Badger.

DEWBERRIES.

For trial—Lucretia, Bartel.

CURRENTS.

White—White Grape, White Dutch.

Red—Prince Albert, Victoria, Holland, Red Dutch.

Black*—Lee's Black Naples.

GOOSEBERRIES.

For general cultivation —Houghton, Downing.

For trial—Red Jacket, Triumph, Columbus, Queen.

*Winter protection recommended.

Grow best in shady places; used for cooking only.

TREES AND SHRUBS RECOMMENDED.

EVERGREENS.

For screens and windbreaks.—Norway Spruce, Balsam Fir, White Pine.

For hedges and screens for shearing.—Norway Spruce, American Arbor Vitae, Red Cedar.

For lawns and cemeteries.—Norway Spruce for backgrounds. For groups—American Arbor Vitae, Hovey's Golden, Arbor Vitae Pyramidalis, Arbor Vitae Siberian, Arbor Vitae, Juniper Excelsa, with Protection.

For small lawn decoration.—Juniper Suecica, Arbor Vitae, Hovey's Golden Arbor Vitae, Arbor Vitae Pyramidalis.

DECIDUOUS TREES.

For cemeteries.—Cut-leaved Birch, Wisconsin Weeping Willow, Weeping Poplar.

For lawns.—All named above, and, in addition, Laurel-leaved Willow, Mountain Ash Oak-leaved, Mountain Ash American, Mountain Ash European, Maple Cut-leaved, Maple Norway, Kentucky Coffee Tree, Catalpa, Spiciosa, Elm American, Elm Scotch, Elm Weeping, European White Birch.

SHRUBS FOR CEMETERIES.

Hydrangea, Paniculata, Cornus Philadelphus, Tree Lilac, Spirea, Japonica, Spirea Van Houtii, Wahoo (American Strawberry Tree), Exchordia Grandiflora.

For lawns.—All named above and, in addition, Purple Barberry, Purple Fringe, Upright Honeysuckle, Wigelia Rosea.

For screens and hedges.—Upright Honeysuckle, Barberry Red Fruiting.

ROSES.

Twelve best varieties Hybrid Perpetual.—Paul Neyron, Mrs. J. H. Laing, Gen. Jacqueminot, Dinsmore, Marshall P. Wilder, Coquette des

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Blanches, Earl of Dufferin, Jules de Margottin, Vick's Caprice, Magna Charta, Prince Camille de Rohan, General Washington.

Moss Roses, four best varieties—Perpetual White, Salet, Paul Fontaine, Henry Martin.

Climbers, five best varieties—Prairie Queen, Russel's Cottage, Seven Sisters, Gem of the Prairies, Victor Verdier.

Hybrid China—Madam Plantier, Madam Hardy.

Brier Roses—Persian Harrison.

REPORT OF THE TRANSACTIONS
OF THE
TWENTY-SIXTH ANNUAL MEETING
OF THE
Wisconsin State Horticultural Society

Held in Madison February 2, 3, 4 and 5, 1897.

HORTICULTURAL ROOMS,
Tuesday Evening, Feb. 2.

President called the meeting to order.

Pres.—The time has arrived when we must open our session for the evening. This session has been designated or set apart as a sort of a business meeting.

The first topic on the program is a resolution that was introduced at the summer meeting, in reference to our annual reports and their distribution. This resolution is now up for discussion.

Mr. Hirschinger — Who was the father of this resolution?

Pres.—If my recollection serves me right I think Professor Goff introduced the resolution.

Prof. Goff — The resolution was offered by the committee on Resolutions.

Mr. G. J. Kellogg—To bring it before the meeting, I move it be adopted.

Mrs. Campbell seconds motion.

Pres.—We would be pleased to hear from Prof. Goff.

Prof. Goff—I expect that the resolution seems very strange to some of the members of the society. The two main

propositions: One is that we cannot have a live society without having a number of live members, and the second is that our people are not so constructed that they will pay for what they can get for nothing. With a state of over a million of people all of whom are interested in horticulture, there have been about 100, sometimes less, who have felt that they have paid something for the privilege of being members of this society. They have had their discussions taken down, and these discussions have been duplicated. The state has come to the aid of this society with a very generous motive, and they said we will publish your reports for you and will send them to the people of the state.

The members pay for the privilege, they do the work and the rest of the people of the state can have the benefit, all for nothing. We find very often that if we ask people to become members of our society, they say they do not see that there is any use of being a member. They can get the report without paying one dollar for it. It seems to me that we have been altogether too generous. I know that that is not a common fault with people. It seems we have done this very often. We have given all we have to the people for nothing. We have traveled to meet here and carry out our transactions and have them reported, and then we said to the people of the state, you can have them all for nothing. We have been saying, just come and help yourself, and we will not ask you one cent for it. It seems to me that it is not the right policy. You may agree with me or not. For my part I would prefer to have the state give us 1,000 volumes for the benefit of our members, and give us the difference for establishing some good trial orchard in the northern part of the state. I believe we could do a great deal of good.

Mr. Hoxie—Is it intended that the discussion is to be taken down? I wanted to say something myself on this question, and I presume that there are others who wish to do likewise, and our remarks will be disjointed, not having considered this question. I find considerable difficulty and have objections to make that Prof. Goff did not in regard

to this question. That seems to be an organic law in the state of Wisconsin. I know it is damaging to us as a society. I know that all states practice different, and however much we may discuss this question here to-day, I am half inclined to think that there must be a change in regard to the distribution of these. Bills will have to be introduced into the legislature. In this society of 100 to 150 members, I would say that it would be better for us to control the distribution of the books ourselves. It is better for us as a society. I do not know which side of the fence I am on, and as I do not wish to be a straddler from a political standpoint, these objections will present themselves to you both pro and con.

Mr. Hirschinger — I do not like to say anything this evening. I would like to take sides with Mr. Hoxie if I could, if I knew what side of the fence he was on. It may be all true what Prof. Goff said. It might be well for this society to buy 100 bound volumes and let us keep them in this society, but the people of the state of Wisconsin are paying for these volumes and they have given us this appropriation simply because they think we are doing some good. They think we are doing this when we give these reports out to the people. The cry for the last two or three years has been that we must have more bound volumes. Now that we did get more volumes, you stop and say that it is an injury to us as a society, while the legislature has given us some money for binding those volumes for the benefit of the people who are paying for it.

Mrs. Campbell — It is an old saying that "charity begins at home," and there comes a time in the life of an organization and it seems to me that that time has come in the history of the Wisconsin Horticultural Society. It seems to me that if we could have a less number of volumes for distribution, so that we could limit the distribution and not go on with the free, wholesale distribution, it would be much better. I do not see how we can build up our membership if we go on as we have in the past.

Mr. Edwards — In regard to publishing these reports

and sending them to the people of Wisconsin, I do not think that they belong to us. I think as Mr. Hirschinger does that they belong to the people of Wisconsin, and I do not think people ought to be compelled to join the society in order to get a report. I would like to ask if the Agricultural Society distributes its reports free as you may call it, to the people of Wisconsin.

President—They do.

Mr. Edwards—I do not see why they are not worthy of imitation, they belong to the people of Wisconsin. They pay for them. They give us \$1,000 a year for experiments. They would just as gladly give us \$2,500 if we made the proper use of it.

Mrs. Johnson—I would like to ask just this one question. Is not this society like a school, run not for the benefit of the teachers but for the benefit of those who wish to be taught.

Mr. Dartt—It has been intimated by some of the speakers that the members did not get a great deal of benefit. I suppose you are all a set of cranks, and it ought to be worth a good deal to you to get together here and put forth your crank notions and have the state publish them.

Mr. Barnes—We people in the northern part of the state use this distribution as a sort of a leverage to secure new members to our local society.

Mr. Periam—We in Illinois have been through the very same trouble. Our society meets in various parts of the state. We have three societies, one in the northern, eastern and central part of the state. They have large memberships. We found it hard to get members and that was for some semi-political local idea. Speaking to Sec'y Dunlap in regard to this, I said: "Your life membership is too high, why not reduce it and have a larger membership." Suppose you put it down to \$5.00 if I was a life member, I would like to pay it here to-day and I will guarantee that if you will put your life membership down you will get a membership of 50 or 60 at least the first year,

and they will come to your meetings, We used to charge 25 cts. and now we charge 10 cts. and we have no trouble in getting members to join our society.

Mr. Toole—If this society was self-supporting then we might say what we should do, and what we wish to have done. If we were very strong in membership so our society could be run by membership fees this would be all right, but as we are obliged to look to the state for aid we will have to look at things as we have done in the past. We must not lose sight of this. Our usefulness is measured by the members that appear here each winter. I doubt if there is a horticultural society in the northwest that has a wider, far reaching interest than this. We have through local societies a very strong influence, and I hope you will follow some other idea than to keep the volumes within ourselves to build up the society.

Mr. Tobey—I would favor an increase rather than a decrease in the number of volumes sent out through the state. I will state that I have done institute work throughout the state, and find that the agricultural reports are given away and the question is, "Where are your horticultural reports?" There is much demand for them. I am in favor of an increase, not a decrease.

Mr. Read—I think that in these days of cheap books, free school books are coming in style and we cannot take a step backwards at this time. I think we should have more, not less, and I believe in regard to the reduction of the state society fee, I believe by reducing that to 25 cts. per capita because it would do more to build up the state society than any other step that could be taken.

Mr. Plumb—I was somewhat surprised to see this topic on the program, and I believe Professor Goff means all right in this. I believe there is room for improvement in regard to the membership, but when I look over the time-honored custom of this society and its liberal patronage by the state (it has been liberal for these times), I should hesitate very much before I should recommend any change. If we could by any possible inducement secure sufficient work to

make us independent as the Illinois and Iowa societies are (their volumes are published by themselves; the state does not publish them) the legislature in this state may be willing to change its policy and give us the money instead of the volumes.

Mr. Coe—Is it necessary that this comes to a vote this evening?

Mrs. Campbell—I move that this be made a special order for tomorrow morning.

Motion is carried.

REPORT OF THE CORRESPONDING SECRETARY.

J. C. HERBST.

The offers made to the children of the state for the year 1896, were as follows: The Wisconsin State Horticultural Society would give to all school children of the state who would send five cents, either six strawberry plants, three red raspberry, two black raspberry plants or two spruce trees. If more than one offer was wanted five cents was to be sent with each offer. The application was to be made by their teacher and each scholar must report on their plants in the fall on blanks which will be sent them.

The following parties kindly donated the plants which were sent out: Thayer Fruit Farms of Sparta, Geo. J. Kellogg of Janesville, Coe & Converse of Ft. Atkinson, W. J. Moyle of Yorkville, F. L. Barney of Viroqua, and J. D. Searles of Sparta all gave strawberry plants. L. G. Kellogg of Ripon and Hanchett & Son of Sparta gave the red raspberry plants. Gould nurseries of Beaver Dam donated the black raspberry plants and W. D. Boynton of Shiocton gave the spruce trees.

The total number of applicants for strawberry plants the past year was 1,407, and 8,442 were sent out.

The total number of applicants for red raspberry plants was 677, and 2,031 were sent out.

The total number of applicants for black raspberry plants was 750, and 1,500 were sent out.

The total number of applicants for the spruce trees was 952, and 1,924 were sent out.

Total number of applicants was 3,796, against 4,116 the previous year.

Total number of letters received 678.

Total number of post offices represented 216.

Total number of counties represented 60, all but ten.

The five counties having the greatest number of offices represented: Grant with 13; Rock with 11; Calumet with 10; Manitowoc with 9; Polk with 9.

The city of Milwaukee sent in 434 applications.

The city of Marinette sent in 241 applications.

The city of Superior sent in 81 applications.

Of the 3,796 scholars who so faithfully agreed to report on their plants this fall but 254 did so, or about 6 per cent. Only about one half as many reported this year as last.

Number reporting on strawberry plants, 93.

Number reporting on red and black raspberries, 87.

Number reporting on spruce trees, 64.

To give those present an extent of the work done the past four years I will give you a few figures:

Number of applicants.	1892.	1893.	1894.	1895.	1896.	Total in five years.
For strawberry plants.....	1,443	1,507	1,757	1,756	1,407	7,870
For spruce trees.....			1,279	1,072	962	3,313
For red raspberry plants.....				1,288	677	1,965
For black raspberry plants.....					750	750
Total	1,443	1,507	3,036	4,116	3,796	13,898

The following figures show the number of plants given out since the work was first begun:

Total number of strawberry plants distributed.....	47,220
Total number of spruce trees distributed	6,656
Total number of red raspberry plants distributed.....	6,895
Total number of black raspberry plants distributed	1,500
Total.....	62,271

Mr. Kellogg — He mentions ninety-three reports received from the applicants this year. What proportion of those were successful?

Mr. Herbst — I have not looked this up.

Prof. Goff — I would like to ask Mr. Herbst to find how many of these applicants are the same as have applied in previous years.

Mr. Herbst — I have no record of the applicants. Of course we could compare some of them. If the same ones reported, that would be possible.

Mr. Toole — Ought we to continue this work, or not?

Mr. Herbst — The number who are reporting I find are dropping off each year. If you will notice the applicants in '96, that is last year, are less than in years previous. I think they will be dropping off every year.

Mr. Toole — The number reported is what per cent. of the whole?

Mr. Herbst — Six per cent., the year previous 12 per cent.

Mr. G. J. Kellogg — The reason I ask in regard to the number of favorable reports, I think there are 93 reports received this year out of 1,400. I think the 1,400 were simply strawberry applications. If the 93 are the number that are recorded on all the plants sent out, it would seem rather discouraging. So far as I have met with and learned of the success and failures as I have been about the state I have known none that have succeeded. One man sent in application for strawberries and raspberries and said they were dead when he got them. He looks at it as a poor sort of a game that we are playing. I have found other parties that have met with like results and they said the plants were received without any separate package, and if school children receive them in that way and carry them home in that shape, they are sure to die. We must do something to make this a better success if we are going to continue this plant distribution.

Mr. Barnes — I think we are discussing this question out of order. We are not discussing the distribution of plants,

we are discussing whether we adopt this report or reject it.

President—Are there no further questions in regard to this.

Mr. Barnes—I move that we accept and adopt Mr. Herbst's report.

Motion carried, and report adopted.

REPORT OF NEW MONTHLY MAGAZINE.

By A. J. PHILIPS, Manager.

In presenting to you the first annual report of our Monthly Magazine, will say that so far I am not well satisfied with the experiment. The first four numbers, March, April, May and June were made up principally in my department of papers and subject matter intended for our annual report which was in accordance with the resolution adopted at our annual meeting, when it was decided to publish this magazine.

At the summer meeting which was held at Waupaca, there was a strong sentiment manifested in favor of having the magazine made up largely of original matter, so that our members would not be compelled to read the same articles twice.

The matter of expense was taken up, and seemed to be the sense of the meeting that if the expense was not largely increased that we have more original matter. It was found that by publishing 500 copies in the fall instead of 4,500 copies that the additional expense of at least 10 pages of original matter would only be about \$20.00, and we decided to publish it on that basis. The August monthly was made up entirely of original matter and received many compliments from our members and readers. September, October, and November numbers were made up of about 10 pages of original matter, but December and January

numbers, on account of having all copy of our transactions in the hands of the printers, had to be made up entirely of original matter, which will probably increase the cost a trifle more.

Owing to the first number being issued the latter part of March, we have not been able to have the magazine in the hands of our members as early in each month as we wished, but by starting earlier next year this can be remedied somewhat.

The printers have been very obliging and have been a great help to us in getting the magazine arranged and out as quickly as possible after copy has been sent in. The past season has been a very busy one with fruit growers, and those of our members who have kindly sent in contributions for the magazine have usually been a little behind time, but all that have contributed are deserving of thanks for the interest they have taken in this new enterprise.

As the matter of cost is of much importance to our society, I will give it as near as possible at this time. The printing and mailing will cost in the neighborhood of \$275 with an additional cost of about \$25 for plates that it has been necessary to make. This does not include all the plates we used. Several of them were kindly loaned to us by other societies and individuals who had them in possession.

In addition to this is the salary of the associate editor, \$50, and the amount claimed by myself for time spent on about the same basis that the associate editor is paid, is \$125, making the total cost of the magazine for the year after deducting the amount received and due for advertising very close to \$400. Of the 352 pages already published about 200, including 60 by the associate editor, have been original matter. We have received in payment for advertising 2,500 miles of transportation on the St. Paul and Central R. R., which has enabled us to visit the new trial orchard and do other traveling for the society, which reduces the expense of the secretary's office from about \$340

last year to about \$170 this year, thereby saving \$170, which reduces the cost of the magazine to less than \$250.

In the September magazine, in order to place the same in the hands of as many new readers as possible, I proposed sending it the balance of the year (6 months) for 25 cents and asked of our members that each should send one or more new subscribers by which means it would have been very easy to have doubled our circulation as it made a very low rate for horticultural reading, and would have placed the paper in many new hands, but this proposition either through lack of interest or press or other business, did not seem to interest our members and less than one-half dozen were received.

Every agricultural paper conducts a horticultural department, and reading matter is so very cheap that it seems almost impossible to get those who should be interested in home horticulture to subscribe for a purely horticultural magazine. The experiment of publishing a monthly magazine as has been done in Minnesota, to increase our membership has been a failure, for while we had three years ago about 90 members, 120, or an increase of 30, is all that we are able to report at this time.

Some of the knowing ones have said that I am incompetent to do the literary work on a paper of this kind. So far in its publication, I have endeavored to collect from other places, similarly located, from observation and from the experience of twenty-five years in my own orchard and garden, solid facts, that, were they read and considered by those growing or contemplating the growing of fruit, would be helpful and valuable, which is what the horticulturist needs in his business, more than high-toned literary work.

It seems that if the magazine is continued at present with the funds we have to use it is a necessity to have the secretary of this society, whoever he is paid, so that he can spend his whole time in the interest of the society and the magazine, so that it can be made self-sustaining.

Advertisers, I find, will not patronize us while our circu-

lation is so small, when they can by paying a trifle more place their ads. where they reach thousands of readers.

I have some doubts at present whether we will be able to secure any transportation from the railroads the coming year. The way the work has been done in the past year has doubled the work in the secretary's office though the extra charge for the sixty-one day's time is only \$125, and if it is published entirely of original matter, and one editor as some are in favor of, it will cost more.

I make this plain statement at this time so that all members will know how the matter stands before voting to continue its publication and arrange for its management, and I would respectfully ask that a committee of three be appointed by the president to report on this report as soon as possible before final action is taken.

Mr. Philips—I will say that I have been to the printers. They make us this proposition: They will publish 300 copies, all original matter, for \$28, and \$3.00 for each additional hundred.

Mr. Kellogg—I move that a committee of three be appointed to decide on this report.

Mrs. Campbell—Before this motion is put, I would like to ask the editor through you why it is doubtful to get ads from the railroad company for another year.

Mr. Philips—They will not furnish us transportation. I did expect a letter to-night from the St. Paul people, as our mileage has expired, asking the same question. I think it will be here to-morrow.

Mr. Hoxie—I wish to call for the report of the associate editor before this committee is appointed.

Motion made and seconded that a committee of three be appointed by the president. Carried.

President—I will defer the appointing of this committee until we hear from our associate editor of our magazine.

REPORT OF ASSOCIATE EDITOR.

Mrs. Campbell gives offer for publication made by Amos & Magie of Evansville, \$24.00 per hundred. They will print the magazine in the same form, 500 copies per month. \$24.00, additional copies \$1.75 per hundred.]

Mr. Hoxie — It seems to me all through the year this magazine needed to be something better, and I have submitted to four good publishers this form of a magazine, double column, this type (shows specimen), 500 copies without cover for \$28.50, with cover \$33.00. Larger pages and double column. Additional copies \$1.75 per hundred. From the report of Secretary Philips it seems doubtful in his mind as to the success of the magazine, and I certainly think it doubtful in the present condition. We want something better or else drop it.

President — I will now name this committee to whom will be referred the reports of the editor and associate editor: Mr. Kellogg of Janesville, Mr. Edwards of Ft. Atkinson and Mr. C. E. Tobey of Sparta.

If there is nothing further upon this question of our monthly magazine, we will take up the next topic on programme.

Mr. Barnes — There are many local societies that will be represented by their delegates. Some will be here tomorrow. Would it not be well to defer the reports until some future time?

President — I think we had best listen to the report in regard to the trial orchard at Weyauwega.

Mr. Phillips — We have a report from Calumet county. Report read by Mr. Philips.

Q.—Is there anything to show the age of those trees?

Mr. Phillips — No, I think they are six years. They were planted in 1890.

Q.—What slope?

Mr. Phillips — The orchard I think is quite level.

Mr. Plumb — Why is it the Miner and Wild Goose plums are reported and no others.

Prof. Goff — He set some Russian plums and a few other American plums, but it is possible these only bore fruit.

REPORT OF HILL CREST TRIAL STATION FOR 1896.

A. L. HATCH, Ithaca Richland Co., Wis.

To Prof. E. S. Goff—

Quite a number of the apple and cherry trees in trial orchard here root killed last winter as a result, 1st, of poor trees as received from the nurseries—notably the very poor Russian cherries and pears from Prof. Budd of Iowa in 1891. 2nd, from drouth season of 1895. 3rd, from severe freezing of the ground without snow. Varieties so killed are shown in exhibit A herewith submitted to which I have added notes from my own orchard as this is an exceptional experience here.

The varieties fruited include several much lauded kinds as shown in exhibit B to which I have added several from my own orchard. Perhaps one of the most noticeable feature of these newer kinds is that few of them add anything to desirable varieties in the way of season or quality, while many are very inferior to such others as we have fruited for years. This observation holds good of the Russian cherries and pears with possibly a single exception. However, among the apples, we find that the Windsor and Scott's Winter are both of great excellence and well worthy of more extended planting, while Forest may fill a place as a good bearing winter apple of almost a sweet flavor. For more extended information I refer to exhibit B.

The observations heretofore made upon the dwarfing the tops of some kinds upon certain stocks is still quite plainly shown upon the few trees we have so treated. Of the shrub fruits sent to this station, the champion gooseberry

seems to be about the same in size and value as the Downing. The Columbus gooseberry proved so large and fine that I divided and transplanted the bushes I had and put a few on trial at Sturgeon Bay.

Trees show a fair amount of buds for next season's crop, and at date of Jan. 30th, 1897, show no injury from the severe cold that has been 34° below zero here within a week.

EXHIBIT A.

Showing trees dead in orchards from effect of root-killing winter of 1895-6:

Russian Cherries — Orel Sweet; Baneder, 1 dead, 1 living; Lutonki Frau Michael, 1 dead, 1 living; Shallow Amarelli.

Russian Plums — Lady Red, Moldavka.

Apples — 1 Shiawasse dead, 1 living; 1 Bethel dead, 1 living; 1 Kesha dead, 1 living; 1 Maple dead, 1 living.

Pears — Idaho blighted to death, Bessimcanka blighted to death, Saponganka blighted to death.

1 tree of Utter in timothy sod-tree about ten inches in diameter root killed.

1 tree Antonovka about same size in cultivated ground but a very dry place root killed.

1 tree Borsdorf Revel in a dry place also root killed.

1 Fameuse six inches in diameter root killed.

EXHIBIT B.

Notes on trees fruited 1896.

Windsor Apple — Three trees planted in 1890. Have borne three crops. Samples shown in good condition at meeting. This dark red apple we think one of the best winter apples we have fruited on account of fruitfulness and good keeping.

Scott's Winter Apple — Bright red, good size and satisfactory as a good keeper. Neglected to have specimens to show.

Forest Apple — Apples almost sweet and still in good condition as shown.

Baraboo Apple — A Duchess seedling but about a month later. That is all can be said in its favor over the Duchess.

Yellow Transparent — Notwithstanding blight, has borne more apples than any other trees of the same age and the apple is very nice for so early an apple — large, yellow and good.

Wealthy, McMahan, Orange Winter all bore fine crops of beautiful and large apples from trees set in 1890.

The following bore nice crops but the season of the fruit is such that they add nothing to the value of the kinds already well known except variety, *Gideon, Grundy, Bethel, Okabena, Patten's Greening, Jewell's No. 228.*

Thompson's Seedling produced a few samples, three of which are still in fair condition and are shown with others at this meeting.

Of the plums fruited *Orel No. 20* and *Orel No. 19* both gave a fair crop of nice blue plums of moderate size and quality. *Cheney* bore a few nice plums but is nowhere near so productive as *DeSoto*, which bore abundantly as usual. *Rockford* bore finely and the plums were larger and better than heretofore. This plum is more nearly like the European varieties than any other American plum we have seen.

The two seedling plums from *Isaac Gale*, set in 1891, bore nicely of fair quality plums of no particular superiority.

Several Russian cherries bore a few samples of very inferior fruit with very large pits. We doubt if the whole lot will give a single kind as good as our old Kentish.

Mr. Barnes—May I ask Mr. Hatch or any one present, can you tell me if the *Morella* sweet cherry is the *Morella* No. 24?

Mr. Hatch—There is no use of depending on the names of them at all.

Mr. Barnes—I would like to ask Mr. Hatch if this *Thompson* in the cherry nursery is a seedling or not?

Mr. Hatch—I have no record here now of planting it, but I think we have two or three of the *Thompson* seedlings.

Mr. Barnes—Those I have are very different.

Mr. Hatch—There are several varieties, three at least of the *Thompson*.

Q.—I would like to ask if he knows if any of the large trees were root killed?

Mr. Hatch—I think they were. They were killed by combination. One thing would not do it.

Mr. Tuttle—With regard to root killing I found we had the same condition in '95 that we had in '72. Large num-

ber of trees in cultivated ground killed that winter. I had more trees killed of a hardy kind, Wealthy, Duchess, etc., than ever before in the history of my orchard, and I had hardly any killed in '72. There were a very large amount of trees killed, and it was supposed to be for the same reason as last year (excessive drought of the year before). The roots were dry. In front of my house three large maples that were 16 inches in diameter were killed by the drought last winter.

Q.—Hard maples or soft maples?

Mr. Tuttle—Hard maples. They were killed in the same way. They were killed by the root. I have Duchess trees where the bodies are 8 to 10 inches in diameter. They showed a feebleness, then they tipped over, the roots were gone, entirely destroyed. A year ago this winter was one of the mildest winters we ever had.

Mr. Tobey—What happened to the blackberries?

Mr. Tuttle—I covered them partially with earth and manure and we lost more canes last winter than we have lost since '84 when we had the plants standing up without any protection. Simply on account of the drought. With the ordinary amount of moisture in the earth it would not have hurt any plant. I have four acres now and I have examined them since this last cold spell and they are in good condition, and there is no question but what those blackberries are going through this winter with an increased amount of cold. They are not ever covered up. They will go through in good condition.

Mr. Hatch—I had supposed until this last season that the apple-tree would stand more drought than any other thing but I think the apple trees have suffered severely from the drought.

Mr. Tuttle—It was in connection with the drought that the injury was done. I have no doubt that everything will go through, if we have nothing worse.

Q.—Do you think that will be true if we had no more snow?

Mr. Tuttle—We have not had as much snow as they have had here at Madison.

Mr. Read—I would like to ask Mr. Hatch if it would do any good to soak the ground around these trees after the leaves have fallen, to completely saturate the ground, or was the damage done before that time.

Mr. Hatch—Now the question would arise, would the tree be saved by simply having water restored to it? I would say emphatically if the water has elements of growth and puts more vigor and life into the tree it will preserve the tree.

Prof. Goff and Mr. Philips visited some places and they can speak as to the condition of the blackberries. Irrigation was kept up until late in September. Perhaps a little too late.

Mr. Toole—Irrigation of blackberries proves nothing in the apple trees.

Mr. Plumb—You know I have written on this subject for a great many years, and I have long ago said, no matter what the summer was, if we could have the soil thoroughly saturated, it would be of benefit.

I have seen orchards where trees have been destroyed by root killing, and I put it in this way. Those trees were all right until about this time when the warmer days come, the sap started and the roots had no hold on the ground. They froze up in dry soil, and they had no way of retaining life. The root killing is done in the spring of the year. I recollect a good many years ago Mr. Tuttle said, "It is not the man's getting drunk, it is his getting over it." (Laughter.)

Mr. Tuttle—I recollect before this winter of '72 in regard to root killed trees, we had many trees. We had some eastern apples. The fall was very wet. Trees were soaked with moisture, and stood in water. I might say they had wet feet.

Mr. Plumb—Possible those did not root kill. They started from their roots. The roots were kept alive and they started from their roots.

Mr. Hartwell, Ill. — A thought came to my mind and it is this. There are other conditions besides the dry and wet ground, healthy or unhealthy trees, I think the thawing out of these trees will have something to do with it.

Prof. Goff — I would like to relate one observation in relation to oak trees. We had 100 or more oak trees on the University campus that were dead this spring. I desired to ascertain the cause. I took a saw and sawed off parts of the barks of those trees at different places. I found the trees had made no growth the preceding year. Some showed a very thin stratum. I infer from that observation that what really killed those trees was that the roots died of starvation. If we girdle the tree so that there is no circulation, the leaves will remain fresh but the tree will die the next year. It seems to me that the same will be true of a tree if the tree does not take up water enough from the soil to form food enough to nourish the leaves and roots, and the tree will be dead the next year.

Mr. Kellogg — It is not only the dryness, but there is also in connection with this, the sand and clay soil. Under any circumstances death will be greater in clay soil, and I think that is the reason of the failure at starting.

Mr. Coxe. — Would it not be a good thing to defer this discussion until tomorrow.

Pres. — Before I place this motion I will appoint a committee to carefully examine these reports and report of the magazine tomorrow morning at half-past nine.

Report of fruit exhibit — We have a very nice exhibit, fifty-three named varieties, about thirty varieties of seedlings that have been entered already, and we will soon have the entries so arranged that we can find any apple that may be asked for.

THE BEST CHERRY FOR WISCONSIN.

BY A. D. BARNES of Waupaca.

In my opinion — is that variety which is most hardy — most prolific and of a fair quality.

I put the burden as to qualifications on hardiness first — for without *hardiness* we cannot get fruit of any quality — and the variety *must* be productive or it will *not* pay, while as to the quality of the fruit is not of so much consequence as it can be put to so many purposes — yet in the selection of varieties we must not lose sight of this factor too.

From years of experience I have found that these three essential qualifications are most happily combined in the Early Richmond variety, budded on Mazzard stalks, planted deep on high clay soils carefully cultivated while young. Thoroughly mulched every year, never pruned except to thin out the inner branches and dead twigs in a very dry and sunny day soon after the fruit is harvested, so the wounds will dry over immediately.

NOTE — If budded on the mazzard stalks and planted reasonably deep it will never sprout up, and if carefully and thoroughly cultivated it will make a rapid growth and mature its wood and fruit buds early. And if properly mulched its blossoms do not open so early and are more sure to set a crop of fruit. And the benefits of the moisture preserved by the mulching is sure to maintain the vigor of the tree and ripen the fruit.

I am now growing and testing the Late Richmond, Late Kentish, Late Duke, May Duke, Montmorenci, Empress Eugene, Black English, Dye House, Wragg, Ostheim, Bessaraba, Buetovka, Long Stem Montmorenci, Orella 24, Eng. Marilla and others. Some of these are no good, while others are quite promising, very fair, and two or three varieties may equal or even surpass the early Richmond. Be it understood that the most of these are sour varieties, but I have one black sweet cherry that with the

Early Richmond has stood the test of nearly 40 degrees below zero and bore a fair crop of fruit the succeeding season.

I may be prepared to make a favorable report on some of these varieties after a few more years of trial.

Transgressing somewhat from the subject proper of this short paper, but I wish to encourage the planting of this most healthful, most hardy and sure fruiting tree for Wisconsin, and my convictions are that this tree should be more extensively grown in this state—both for domestic and market purposes—for it fruits young—quite regularly, is very healthy and always sells readily at a fair price, and the fruit carries a long distance in fine shape.

WEDNESDAY MORNING.

10 O'Clock.

President called the meeting to order.

President—The first thing this morning I will appoint as a committee on program, B. S. Hoxie, F. C. Edwards, E. F. Babcock. This committee to report before we adjourn for the noon hour. There may be some changes on the program that will be necessary. On the committee on awards I desire that they resolve themselves into a committee, and suggest one or more persons to make awards, I think it would be more satisfactory to suggest some name and report some time during the morning session.

Mr. Hoxie—I am willing to work if I must but I wish you would get some one else as I have no time. If it is necessary I will.

I understand Professor Taylor wishes to be put on earlier on the program so that he can get home.

President—I will ask Mr. Toole to be on the committee. We have with us this morning a number of delegates from other societies and from neighboring states. I believe Mr. Tobey has a list of them. I wish that the following

names will be placed on our annual membership list for the coming year: Prof. Taylor, of Nebraska; J. L. Hartwell, of Illinois; Jonathan Perriam, of Illinois; H. F. Thurston, of Illinois; John Corse, of Racine; Prof. Luggier, of Minnesota; C. H. Dolton, of Illinois; W. B. Lloyd, of Chicago.

On motion these gentlemen were made annual honorary members for the coming year.

President—We are pleased to have these gentlemen with us and will be pleased to have them take part in our discussions.

President—Is Mr. Babcock of Sparta in the room?

Will be here in a moment.

President—The first topic upon our regular program this morning is the report of the committee on our regular program. I would inquire if ready to report.

Mr. Philips—Mr. Raymer will give us a short paper on irrigation. I put him on for Thursday evening, but he cannot come, so I have changed the program so that he can read it either to-day or to-morrow.

President—Referred to the committee on program.

Mr. Tobey—They were to report on the report of the editor, manager and associate editor, as we understand it.

President—We will now listen to the report.

REPORT OF COMMITTEE ON PROGRAM, EDITOR AND MANAGER AND ASSOCIATE EDITOR.

F. C. EDWARDS.

Mr. Edwards—I have not heard from either of the editors but I give this from the facts at hand.

President—What is your pleasure in regard to the report on the report.

Mr. Hatch—I move that the matter of pay be referred to the committee of finance. Carried.

Mr. Tobey — If it is referred, it will come back for discussion before this society and if we are to settle it at any time we might as well settle it now. I do not see that there is anything to be gained by referring it to other committee, and we might as well go through it now as tomorrow, or the next day.

Mr. Hirschinger — I think that the motion ought to be referred to the finance committee, and I would like to see it so referred.

President — It has been moved and seconded that the part of the report in regard to the publishing of our magazine be referred to the finance committee. Carried.

President — The finance committee will take this report in charge and report as soon as possible.

Mr. Campbell — Is it not possible to get a copy of the names of the committee of last year. I would like to know who is associated with me, and I know there was a change made.

President — Committee is Franklin Johnson, F. C. Edwards and Walter Moyle.

President — I trust the committee will get this matter in charge and report before we adjourn if possible.

Mr. Edwards — I think that this committee should have further knowledge whether this statement is correct. We must know whether it is a fact that the reports are made, in order that we know it is correct. I see no other way of settling it, what Mr. Philips, our secretary, should receive.

President — The committee of finance will get all the facts possible in this matter.

Mr. Edwards — The report is that our secretary should edit 12 pages of original matter for 6 months which is 72 pages. According to the way we pay our associate editor, that would amount to \$66.62. We wish to treat both alike. I would like to have this question answered.

Mr. Hirschinger — I understand that there was a compromise between the editors, and I did not understand that there was any authority of any kind given to a committee except the committee of compromise.

Mr. Philips—I would say that some of this work was done prior to this meeting, and then when the time came to have the copies in the hands of the printers, it was necessary to print December and January numbers entirely of original matter, and that makes the increase, for what there was done prior to that time there were 12 pages in the three months.

Mrs. Campbell—It was voted at the winter meeting that the original matter should be confined to four pages, at the summer meeting, it was deemed impracticable to publish twice the same matter. In order that I might know what was expected of me after I left that meeting I was informed that a compromise was to be made, and that the number of pages would be 12 and not 10. It was said to me at the summer meeting that the work would be arranged for at that meeting. I am willing to let the matter stand. I stood all the while ready to edit the original matter of the magazine, and I do not see why any claim for special services should be made. I stood ready and had the material prepared for the past months in accordance with the vote of the summer meeting. That is one thing I do not understand.

Mr. Hirschinger—I would like to say right here that the compromise was made after I left the meeting. I do not think Mr. Herbst was called out to that meeting. I just simply want to say that if the executive committee be called out it should be a full committee, and the compromise must not be made after we take the train. *Applause.*

President—We will defer this discussion until we hear the report on the report.

Mr. Tobey—Can we take up the balance of the report?

Mr. Hoxie—I wish to say a word in regard to this report. It seems to be a forgone conclusion that the secretary should edit it and therefore it seems to me that it would be better for us to leave the matter to the Board. I further hope that this society will not undertake any mean work that we should later feel ashamed of. We are not satisfied with the magazine. It ought to be changed. We ought

to have something of a different shape or give it up entirely before we use up \$800 or \$400 of the state's appropriation. I am in favor of paying our secretary more than we have in the past year.

President—What is your further pleasure in regard to this. Do you desire to take any action?

Mr. Plumb—I did not understand in the beginning what the plan of the magazine was to be. I supposed it would be on the Minnesota plan.

Mr. Philips—That was the original plan.

Mr. Plumb—But if I understand the Minnesota plan, they not only publish the matter of the annual meeting, but they also publish original matter all of which is stereotyped, and does not need to be reprinted. It seems that our Wisconsin society is on an entirely different plan, simply to publish such of it as needs to go before the country, and to have this magazine entirely of original matter independent by itself. Now if I am right, I think it is a great mistake. I do not think it a good plan to follow Minnesota to combine the original matter and annual report and not reprint it, or use the same plates in combining the volume. I suppose this was the original plan, but I understand now that the original matter is not going into the state report.

Mr. Philips—There is no use of it. Prof. Goff is very much opposed to having to read the matter over twice. He thought we were able to maintain a horticultural paper, and we were to make our magazine as far as possible original matter and see what the extra cost would be. I hope it will be settled at this meeting. In Minnesota, as I understand it they publish a few and combine them at the end of the year. We have 250 pages, they have 540 pages. What they have is a bound volume of their 12 reports. I saw no original matter in that that was not in the Monthly. Their Monthly consists of 40 pages.

President—I think we will have to defer this discussion

Mrs. Campbell—I believe no motion has been made and I therefore, to bring it before you, move that the report of

this committee be adopted. Mr. Hoxie offers amendment. Accepted by Mrs. Campbell.

Mr. Hirschinger — The question as to whether it will be left with the executive board. I do not think it ought to be left in that way. I think the society ought to settle this matter, and I would like to have Mr. Hoxie accept an amendment to this motion.

I would offer as an amendment to the amendment that the executive committee report to this meeting whether to continue the magazine or not.

Mr. Kellogg — I second the amendment to the amendment.

President — The amendment is that the executive board report to this meeting whether they deem it advisable to publish this magazine for the coming year. This question is now open for debate.

Mr. Hatch — Perhaps I am out of order. I am not versed in parliamentary practice. I would like to know a little right here on this subject. We are working for the state of Wisconsin and not for this society. We do not pay a cent for them. Now I think that it is not more than justice to this state that we look to the interest of the people who furnish the money and pay the bills and I say to you this, to now make a final disposition of this matter is to handicap the whole situation. I think it is only good common sense, and in justice to the situation that you invite co-operation of those people throughout the state. It is justice to the people to do that. I think the only way to dispose of this matter is to put it where it will reach all the people. The magazine as it has been heretofore, has been of no good to anyone, reading matter is too cheap and good, and if you cannot do just as well as others are doing; if you cannot do something that others are not doing then you had better quit. It is not very entertaining to our visitors to have us discuss these little differences. The right way is to broaden in these lines, and if you cannot do that you had better stop. Now give the executive board authority and a chance to do that and then you will dignify it. You are not satisfied with it yourselves, you have put in hard work, and

you can make it useful to others. Have the executive board take up this matter and pay \$500 to our secretary. You will see that there are a number of candidates for the office for secretary, and why, because there is something in it. Instead of doing all we can to increase the salary of the secretary, we ought to reduce it. I have spoken but once, and I think this will be enough.

Mr. Hatch—I believe I said that I would not get up again. May I talk when I sit down? (Laughter.) I want to get back at Mr. Hirschinger. Now he says he does not care whether he violates the rule of this society or not. You will have to excuse him for that.

Mr. Hirschinger—I did not say so.

President—I shall be obliged to cut off debate.

Mr. Toole—I think this magazine has been as good as could be expected under the circumstances, lack of experience and altogether too much advice, and I think with the experience it has had it will be better in the future. I do not know which would be the best way.

President—It has been moved and seconded that this matter of publishing be referred to the Executive committee, and that they report at some future meeting of this society. Carried.

Mr. Johnson—We find it is impossible with our present information to come to a decision, and we must ask that the executive committee meet with us at the Capital House after dinner. We cannot come to an intelligent decision.

President—The next topic on our program are reports of committees on observation. I would ask the secretary if reports have been sent to him.

Secretary—Few have been sent in. There is one here.

Mr. Read—As it is getting late I move that we have this subject at 11 o'clock.

Mr. Hoxie—Unless there is something special in these reports, I move that we consider the question as suggested by Mr. Read.

President—It has been moved that we dispose of reading the reports and go on with the reading of Mr. Coe's paper.

MR. COE'S ADDRESS.

Members of the Wisconsin State Horticultural Society:

This is a question that carries with it a good deal of importance, it seems to me. In order to get at it, let us review for just a moment what we have been doing, and see if there is not some way in which we can do better for the horticultural interests of our state. In the first place, I find that we have about eighteen or twenty local societies. Each one of these local societies has been organized with good promise. Every local society that we have organized up to now, has been as we all know of assistance to the state society. They have been allowed to pay their annual dues ten cents per annum in some cases, in other cases fifty cents, and over. They have contributed some \$1.00. They get the reports. During the last year we get a magazine which has cost us \$1.00 per year. Now in fact we have been paying the local societies or the members of the local societies a premium for keeping out of our society. Of course our interests have been divided, and it seems to me in order to do credit and still do the greatest amount of good to the horticultural interests of this state, that we must work together as one great family. The plan is this, to have the members of other local societies become members of our state society, by contributing as much as we contribute to our society, and they say 75 cents of that go to our state society. Now then our interests are mutual with each and every one. We have the same object in view, horticulture in Wisconsin. I find we have 125 members in the state society giving us \$125.00 per year from that source.

If we have plenty of local societies I think it is safe to say they will average about 300 members in the different horticultural societies in the state, outside of the state society. Now then we have been unable to pay our expenses with members we already have. I think perhaps it might

be wise to reduce our annual membership to fifty cents, this of course would bring us in closer union with each other. We would work for the same object as members of one great family. I think the horticultural interests of Wisconsin are greater than the interests of any other state society can or will be. There is one more point. There has been a rule also that the local society has been requested to furnish 50 new members to the state society. This is an injustice to the local society. Let them require nothing more of them than this, this is only justice, let us work in union, work with the same object in view, as members of one great family.

Mr. President, I am through. (Applause.)

President—This question was made a special order of business for 11 o'clock this morning. It is now open for discussion.

Mr. Hatch—I think Mr. Read has something on the same subject and I would like to have him present it.

Mr. Read—I would say that my ideas on this subject are along the same line. I cannot express them better than to read to you a part of a paper that I read before a local society some time ago.

Mr. Read reads following paper:

At present the state society gets no revenue whatever from the local societies, excepting from those persons who are members of both societies.

Another plan and one which it seems ought to have been considered long ago is the making of each local society a branch of the state society, with a per capita tax to that body on each member; and thus every member of a local society would also by virtue of the payment of his dues to his local society, be a full member of the state society. This plan would necessitate a lower price for membership in the state society but with the large increase of members

it would, without doubt, bring more money into the treasury of the state society.

The state society has a paid membership of only about 100 members, which, at one dollar each only brings in about \$100. Now if the state society should adopt this plan and by a by-law fix the annual fee at 50 cents, which shall include the fees of both local and state societies, 25 cents of which must be sent to the state society, with the annual report, in order to entitle the local society to a delegate's expenses from the state society's funds, you will see that it would add a large number to the membership of the state society, and without doubt will prove the best method of uniting all in one body.

It would also add another incentive to starting local societies, for each new society organized would add several new members to the state society as well as funds to its treasury.

There may be raised an objection to this plan as far as amount of fee is concerned, but in these hard times when there are so few dollars to get, and they are so hard to get hold of, I feel certain that four times as many members can be secured at fifty cents as could be if the fee was \$1.00, or as at present \$1.00 for the state society and local society fee extra.

When the annual report of the state society can be had free by everybody, it must be acknowledged that most people will look long at the dollar before paying it for a membership in a society. the meetings of which they will probably seldom or never attend. But by making the local society a component part of the state society in every community, the people can be interested in horticulture in Wisconsin as well as in other states.

The horticultural magazine ought to have a circulation of 1,000 copies each month, and I see no reason why it should not, if the plan above outlined is adopted and the work of organizing local societies is pushed into all parts of the state. And with a year's subscription to a nice little

magazine to offer to each member it ought not to be hard to build up local societies.

A great state like Wisconsin, and one that is devoted so largely to agricultural and horticultural pursuits, ought to have a state horticultural society in full touch with the people of the state who are interested in horticultural pursuits, and where, I pray you, can you find any who are not thus interested, for horticulture covers more latitude than any other industry on earth. It is not solely devoted to fruits, but every one who grows a flower garden or even a few plants in the house, every one who has a kitchen garden where he or she grows the vegetables for family use, or who has a few berry plants or bushes, or who has a lawn around their house; all of these are engaged in horticulture as well as the professional fruit grower and market gardener.

It is placing the number much lower than it ought to be to say that the state society ought to have 1,000 members. This is only about 15 for each county in the state. In fact nearly every county ought to furnish 50 to 100 members, if the state was thoroughly canvassed and worked up to a pitch of horticultural enthusiasm.

And in order to do this work our state society should pay its secretary a salary large enough so that he could devote his entire time to the work. Other states societies do this. Minnesota, for instance, pays their secretary \$500 per year, and their society is leaving ours far behind in the race for membership.

Our state society only pays \$300, which is not enough for the amount of work that the secretary ought to do.

President — Any further remarks on this question?

Mrs. Johnson — I was for some time secretary of a local society and while I believe in the theory that these gentlemen have advocated and think it is the true plan, I do not think it would be practicable at present. If you keep the membership fee up to a dollar, dollars are scarce just now, and it will not be possible to organize a local society on the dollar plan.

Mr. Dartt — The local societies support themselves. The state societies are supported by the state. Whose money is this that is in the state society. It belongs to all of you. You contribute to pay that in and my theory was that they had better make all the members of the local societies, full members of the state society, but I think that the majority of you are of the opinion that these local societies ought to contribute something to the support of the state society. I believe they ought to come in as full members, then you could hold up the advantages that they gain. Would not your chance of getting money from the legislature be better if you say you are doing this? We in Minnesota but all the power in the hands of the executive committee they elect, they spend the money as they please, and the members of the executive board, so that if any one would kick up a row, their chances would be very poor. Having all the money that there is contributed by the state, you ought to be very liberal with outsiders.

Mr. Hartwell — The life membership fee to our state society is \$5.00. Local societies 25 cents. I understand that your reports go into the hands of farmers and go there for nothing. This is rather an injustice to the members of the society. But what is your society for, is it a little coterie of your own or is it a thing that the whole state is to enjoy? You have put a flea in my ear, and I will take it back to Illinois and let it loose. There was one other point, I do not recollect it now.

Mr. Edwards — We have now heard from Minnesota and Illinois. Is the Iowa delegate here. If so we would like to hear from him. I have been there, each member pays one dollar. I would like to have this question looked at from all sides. I take much interest in this, reducing the fee to 50 cents, gives us more members. We ought to do as well as Minnesota has and if I was convinced that by reducing our membership to 50 cents, and take in 500 or 800 or a thousand members, it seems it is the proper thing to do.

Mr. Coe — I believe the experiment of reducing the fee

to 50 cents would be the proper thing to do. It would be best for the horticultural interests of the society.

Mr. Hoxie—I simply want to say that this is a matter which I have given considerable thought to with regard to the work of this society relative to the state society. The work is different in every state and I do not know of any other state that started out with the plan we have adopted. We know it is not so in Minnesota. What is the best for one state is not the best for the other. We might make a radical change to benefit the horticulture of Wisconsin and give it to the people. The state has come to our assistance, and said we are willing to help you, and we will publish your volumes for you. In New York the members put their hands into their pockets, and contribute to have the transactions of their society published. They are not obliged to do that here. I have looked at this matter in different ways, and I cannot see that we can gain very much by a large increase in membership. I would like to see more local societies and let them send their delegates to us. I will oppose nothing that will be of benefit to horticulture of Wisconsin.

Mr. Dartt—I hope I am excusable if I say one or two words more. I think what you lack here as much as anything is cheek. Now you go to work in sincerity, as you are working now. Put your membership down to 50 cents and then go to the legislature and say, here, we are doing all we can, we are working faithfully, and we want some more money. You would get it. If you will convince them of that they will give you \$2,500 just as well as you can get \$500. Get two or three good men in there to convince the members, and they will do it, there is no question about it. There is one point that you can work this matter up to great advantage, that is state pride. Tell them that you issue a magazine for public good, and that you cannot make it creditable to the state if they do not assist you. We have double the expense in Minnesota, they make their report twice, they are liberal over there, and

do you think Wisconsin wants to be behind Minnesota, no, they will give you all you want. Just present it to them in its true light.

Mr. Coe — I think that the gentleman who has just preceded me is more confident in our Wisconsin legislature than we, who have had experience. We must take active steps as a society to bring a closer relation between the local societies and the state society. I do not believe in state organization but for the express purpose of getting more people into the state society, and the facts would conclusively show that we could more easily get two men to join for \$1.00 than two men for \$2.00, but by reducing our fee to 50 cts. we cheapen our society, and I do not think that any person who is interested in horticulture is not willing to give 2 cts. a week for the advancement of the cause in this state.

Mr. Holmes — I am a little bit interested in horticulture, although I run a newspaper, I am not running a horticultural paper either, just a local newspaper, and am just running it to make a living, but I remember when J. M. Smith came to our town a number of years ago and organized a local horticultural society. That was the first that had been done for horticulture, and I will venture to say that 9 out of 10 of your horticultural reports are used for scrap books, so what real good did your horticultural society do with those books. We have about 50 members in our local society, our dues are 25 cts. We have our meetings, they are social and we make things merry, and the members feel in close touch with the state society.

Mr. Read — I want to say a little something on what Mr. Hoxie said if I understood him right. He seemed to think it was not necessary to increase the members of our state society. We can in no other way stimulate the work of horticulture, unless we get new members. Larger the membership the more good. I do not see that the lowering of the price is going to cheapen the value of the work.

Mr. Toole — We see from the members of other state

societies that each state has a way of its own and that no state is satisfied with its own way.

Mr. Loop — We have not heard very much about the local societies yet. We have one at our place, we have been running same for two or three years. We have something of a membership. We hold a summer meeting if possible, also a fall meeting. In regard to the state society the thought outside is that you a mutual admiration society, that you are here for the purpose of getting a little out of the society, or that you are advertising your business. This may not be true. I think that any proposition that looks to a binding of the local societies and the state societies would be a benefit to the society at large. The sentiment in some sections is that there are a few men who monopolize the whole thing and do all the talking. This is probably not true. I think myself that the Horticultural Society here is made up of men that are earnest, true and thoroughly progressive, but you must do something to get the idea that you are a clique out of their heads. If you can possibly do that then you will have a large membership, which is necessary. It looks as though you were all grabbing for what you could get. I am not usually one of the kickers, but I am telling you what I know is true. I have no plan of what you ought to do. You have many suggestions here, and a combination of the best elements of all of them, would be the best thing to do, but I do say one thing in regard to our local societies, we are made up of all sorts of religious beliefs and moral standing, and jealousy will creep into some societies and you must stamp them out in the beginning. We made a resolution that we would agree not to disagree in any matter and we have carried it out pretty faithfully.

Mr. Holmes — In regards to grabbing for all we can get. We have a local society and we are grabbing for all the information we can get.

Mr. Hartwell — We are ourselves wrangling over this same thing with as much earnestness as you are, that is our condition just now. We have some of the best men in

Illinois. I happen to know that there is nothing in it but there is that feeling. While I am on my feet I will say that we have one little society, the Sterling & Dixon, which meets between the two places at the home of some farmer, or in summer in his yard. We observe him for a whole day and discuss him in the evening.

Mr. Dartt—He says that they go over to his farm, and then they discuss him. The question arises whether he does not cuss them. (Laughter.)

Prof. Taylor—While we have more fighting out there than you ever dreamed of, we have one of the best horticultural societies. One-third of the members rise and throw the other two-thirds out. If you keep this up long enough you will be all right. (Laughter.)

Mr. Hoxie—I think we have a rule to pay expenses of delegates from local societies to the state society.

Mr. Philips—That rule we have was this, that we can pay the expenses of the delegates of the local societies once each year.

Mr. Johnson—I move that these resolutions be referred to the committee on resolutions

President—They will be so referred.

Mr. Philips—Prof. Taylor is here on these conditions, he gets \$50 for coming.

Mr. McKerrow ———— pays him \$30 and we are to pay \$20.

Mr. Philips—Prof. Taylor is on the program for Thursday evening but he wished to leave to-morrow at 5 o'clock as he has some business to attend to. We pay him \$20 and I think we ought to hold him. We are all anxious to hear him and I am not in favor of having his place changed on the program.

President—The committee on program will take charge of this matter.

Mr. Hoxie—I hope this change will not be made. Prof. Taylor ought to be here to speak in the assembly chamber.

President—We will conform as closely as possible to our program with the exception of Mr. Raymer.

If there is nothing further, we will adjourn until this afternoon.

Adjourned until 1:30 this p. m.

WEDNESDAY, 1:30 P. M.

Meeting was called to order by the president.

President—I will take the liberty to appoint Mr. Plumb as a committee on awards to judge the fruits, and Mr. Read to judge the potatoes.

President—Mr. Hartwell, of Dixon, has a remark to make.

Mr. Hartwell—I would like to know if any one here has a valuable new variety of fruits of any kind. Our state society have instructed me to get its name and place, and we will some time during the summer come and look at it.

President—I trust that all or any person who has new fruit will report to Mr. Hartwell at any time convenient.

President—The first topic on the programme this afternoon is a discussion, "Shall the state society accept the proposition of Mrs. Freeborn and assume control of the seedling and experimental orchard planted by S. I. Freeborn in Richland county?" To be opened by Prof. Goff.

Mr. Hoxie—As Prof. Goff is not here, I suggest we call on Mr. Hatch to open the talk.

Mr. Hatch—The professor is prepared but I will do the best I can, and I will resign as soon as he comes in.

I would say that since the death of Mr. Freeborn the orchard has been in the hands of a renter. Now during the summer Prof. Goff, Secretary Philips and President Kellogg visited my place, and we went to this orchard. Many of his seedlings fruited in the nursery. Mr. Freeborn in the spring of this date (two years ago) expected to do a good deal of work in the orchard. The result has been that there are several thousand that have fruited in nursery rows. Mr. Philips, Prof. Goff and myself

made examination of these, and we marked some of the trees for removal. This work ought to be continued. Another thing that Mr. Freeborn had done was to collect together Russian varieties that had been under important tests. Then another thing he has done was to plant a large number of crabs. These stand in the nursery, and are of size to be used for top grafting. The land is now in the hands of the heirs controlled by the widow. It is run by a renter who Mr. Freeborn had working for him before he died. Mrs. Freeborn has made some propositions. She of course expects to make something out of the sale, as it was the effort of a life time culminated in many hopes. There are seedlings for top grafting, and there is ground enough that is available, and this may prove an opportunity.

Prof. Goff — I have made two visits to the orchard. The last time I looked over the orchard very carefully and marked about fifty odd trees. I will add that this was in the first of October, it was after the apple harvest proper, all the early apples had already dropped and those still on the trees were of late variety. I saved about one dozen and took them home, and made notes of them. I kept them until after Christmas. A good many of them were promising apples to say the least, Mr. Philips also made some notes on the apples, and he will be able to tell you more. Whatever is done by this society should be done soon. The orchard has not been cultivated for some years, some of the trees are crowded out by neighboring trees, some will never bear unless others are removed to give more room.

Mr. Hatch — Are some of these trees so small that they can be transplanted?

Prof. Goff — Mrs. Freeborn's wish in the matter is that they will not remove the trees to any large extent. She has signified a wish to have them tested at Madison, however I do not know what contract she might be willing to make. I saw Mrs. Freeborn and her son, and they would of course like to have the benefit of the value of them so far as propagation is concerned. They do not propose to

let the trees go from their possession, but they would like to have the society make a trial station of them there.

B. S. Hoxie — Would it be practicable for us to take charge of that four or five acres whatever the orchard may be. I understand from you that the trees are too large to be removed.

Prof. Goff — The bearing trees it would be impossible to remove.

B. S. Hoxie — Then we as a society would use this as a trial orchard. We don't care for cutting scions.

Prof. Goff — No, we don't. At one time Mrs. Freeborn signified a willingness to place the trees at any other trial station, so I do not know just what to say. If we find something that is especially good we will propagate it a little, and I doubt if we will go to the trouble and expense of treating this in the sense of a trial orchard, and therefore I think that someone should find out what varieties are valuable. I doubt very much if it will be done unless it is done by our state society. I would like to know what Mr. Phillips thinks of this subject.

Sec'y Philips — I have been greatly interested in the experimental work of Mr. Freeborn for a number of years. He explained it fully to me. He took pains to secure something that would be valuable and talked of it and regretting when he died that he had to leave the work. When we visited the orchard, we went there at a very unfavorable time. It began to rain. I looked the orchard over very thoroughly. I got my feet very wet. I found especially among the Duchess seedlings some very fine specimens. I found a few that were apparently more valuable than the Duchess. That is, their keeping qualities. I have a few in my cellar that I think will be of value. My idea was this: That a trial made there on that ridge would not be of near as much value to the people of Wisconsin as a trial made on our new trial orchard grounds in Wausau. My idea was to get the scions and let us try them up there. I made the proposition to Mrs. Freeborn to come late in the fall and cut some scions, but she ob-

jected to letting them go. Some are Longfield, some Hibernial, and some Utter seedlings; that is, they resemble those apples. There is one there that has the appearance of an Utter but will keep three months longer. I found one in the Russian orchard that I was very much pleased with. I find on coming here that it is exactly like the apple called the Milwaukee.

Mr. Hatch—Do you know whether Mr. Freeborn had any of the Milwaukee?

Mr. Philips—It seems to be the Milwaukee that I found.

Prof. Goff—I will say that I know Mr. Freeborn had some of these apples. He showed me some.

Mr. Philips—Mrs. Freeborn feels she ought to reap some benefit from this orchard. She really feels she ought to have the first benefit. As I before stated, I am of the opinion that tests made at her grounds will not prove near as much as tests made on our own grounds.

E. H. S. Dartt, of Minnesota—I came over here to do you good. I want to do you all the good I can. I have had experience along this line, and I think I can do you a little good. There is one point that you all know and that is that in the last ten years with our mild winters, thousands of seedlings have developed all over the country. When I moved up from Wisconsin to Minnesota, I took up quite a number of the hardiest seedlings that I had, and replanted them, and there was not one hardy enough for Minnesota, so that your average Wisconsin seedlings could not be so expected to be quite equal to those grown in Minnesota, as a rule. I am not going to take the position that the Duchess seedlings may not be just as good grown in Wisconsin, but of a great many seedlings very few will be really valuable. Up in Minnesota I have grown many seedlings and I have picked up a great many all over the country and tested them. I am at work for the state of Minnesota and I look this seedling work over and I find among a great many there only a few that are really valuable. Now Minnesota will say what have you been

doing, you have been experimenting and you found so few valuable.

Now I believe that you can do better than to go to work and try to develop something very valuable out of these seedlings and still not owning them.

J. C. Plumb—For 20 years, just about 20 years I can recollect now, I was receiving all the way from 20 to 50 varieties of the most promising seedlings. I took some valuable scions and top grafted them and put them in the nursery, and then ran my chances. I watched them for three years, if they survived three years, I would try again. They were the best seedlings, good enough in quality but lacking in vitality. I have stopped this kind of work. I really believe a real benefit is to come from this local experiment station at Wausau in the center of the state. This is a station, gentlemen, that should be pushed for all it is worth. If this society can carry that to a legitimate end at Wausau we will have done for this state untold value. But these experiments do not count. Here is an apple, the Windsor. For years our old friend Hill of Windsor of this county would bring his seedling apples, and he said to me "I want you to come up and look those things over." I went up there, and out of a dozen seedlings in his orchard, I cut scions and took them home and root grafted them, and after growing them for five years, I came here and said, "Here is a winter seedling apple, the Windsor apple. It took ten years to convince this society of the merits of this apple."

The president asked Prof. Taylor to give his idea as to the value of seedling apples.

Prof. Taylor—My honest opinion as to the actual cash value from a business point of view of a thousand seedling apples in nursery rows, based on the likelihood of their producing better sorts than we now have I should not put it at more than 15 cts. For 25 years I have been watching this question and in all that time there has not been a change of over 20 per cent. in my neighborhood in the varieties recommended for planting.

Take a list of the best 20 varieties which have been selected and recommended and there have not been more than three or four generally accepted additions made in the last 20 years. There has come up in the meantime the disease for foreign fruits. The productions of new sorts from seedlings is a labor of love and will take years and years, and the probabilities are 1 in 10,000 against you. As to the apples under discussion, I do not happen to know anything of the conditions, so please give me credit for speaking in general. I know that a sister state of yours has offered for the last 15 years a premium of \$1,000 for a seedling apple, the demand being that it must show the quality of the Grimes, hardness of the Duchess, and the keeping qualities of the Ben Davis. In other words it must be able to stand up in the manner of hardness, quality and ability to keep, along with the three apples which stand for those qualities. So far as I know there has not ever been an entry made for the premium.

I know that a great many people start out and grow new varieties from seedlings and I believe that is the only way you will get good results. I may say again when I speak of some of the foreign fruits, that I believe whatever results you get from new fruits, are going to come through the very process mentioned, but we must understand that results are very slow in coming. In all the years that I have been watching this I cannot remember now a single case where the producer has made any money out of any new varieties of apple he has introduced.

The process of experimenting is so long in settling the value of new varieties that it is sure to become pretty well disseminated and it is not possible to retain a monopoly. If the originator does not do the work from pure love of the work or a desire to produce something worthy to serve as a monument to his memory he is going to be disappointed. The owner of seedlings who expects to make anything out of them is going to be disappointed too.

J. L. Hartwell of Illinois--In conclusion of this last speech, is it not perfect nonsense to keep up these trial

orchards, experimenting on and trying these new fruits? I am meddling with something outside of my own state but it seems to me it is worth your while to put a little something in and find out the value of the orchard. In this case I am contradicting my worthy professor.

Prof. Taylor—The object of my remarks was to place a cash value on seedling apples in general.

Mr. Dartt—The idea has been advanced that it will take many years to get anything out of our experiments of seedlings, there is no short cut. He evidently don't understand our girdling scheme.

Mr. Taylor—I knew of it 20 years ago.

Mr. Dartt—You did not improve your opportunities.

President—In order to accommodate the gentleman who is to give us a paper on irrigation, we will halt with the talk at this time.

PAPER ON IRRIGATION.

BY MR. GEO. RAYMER, OF MADISON.

The secretary of the State Horticultural Society, who is responsible for the infliction of this paper upon your meeting, was considerate enough for your feelings to limit me to ten minutes. But, however dull you may regard the paper, it will have to be conceded that the subject is not a dry one. Irrigation began with the earliest attempts of man to cultivate the soil, and from these first lessons in experimental agriculture to the present time irrigation in one form or another has followed, to a greater or less extent, wherever man has engaged in agriculture. Even in the United States, as is now well known, irrigation was extensively practiced long before Christopher Columbus was born. While the value of water upon land is so well known to every farmer, strange as it may appear only the vaguest knowledge of the art of irrigation exists through-

out all that portion of the United States east of the Mississippi river. In the great arid, or rainless, region of the west much of the land can never be irrigated owing to the lack of an available water supply, and generally this land will not produce anything and no attempt is made to cultivate it. It is also true that in what is known as the humid country, or rain belt, a very large part of it cannot be irrigated for want of a sufficient water supply. In all this region, however, one-half, or two-thirds, and occasionally a full crop can be grown without irrigation. Our people never having known any other, or better way, assume that there is no other way, even for the thousands of farms that can be easily and cheaply irrigated, and they go on from year to year accepting with patient resignation half a crop, or less, for a whole year's labor. In the west many large districts are irrigated at small cost. In all the great San Joaquin Valley, sixty-two and a half cents an acre per annum is the charge for water. The average for all the irrigated land in the state of Colorado is one dollar and a half per acre per annum.

But water is by no means always so cheap. In the Riverside country in California, probably the most valuable farming country in the United States, the annual charge for water is seven dollars per acre, and in many other places nearly as much. In many localities the farmers are organized into companies and have constructed their own irrigation dams and ditches. The cost of these irrigating plants amounts to ten, twenty, and in some instances thirty dollars an acre for all the land under the irrigating system. There is in addition an annual assessment for maintenance and repairs of from fifty cents to five dollars per acre. In Wisconsin there are many hundreds of farms that, at a less expense for irrigating plant and at a less annual expense for operation, might be and ought to be irrigated, and just why no more attention is given this subject is certainly most singular. It hardly seems necessary to consume the time of your meeting in an argument to show that it would be profitable. The evidence is already abund-

ant. The Michigan experiment station has shown a gain of 129 bushels of potatoes to the acre by supplementing the rainfall with irrigation. Also a gain of 5,000 cabbage heads aggregating 11,325 pounds in weight. A gain of from two to three hundred bushels of beans and peas. The same evidence comes from other stations in the humid country having experimented in irrigation. The reports of the Wisconsin station for 1894-5 and 6 alone leave little doubt of the wisdom of providing an irrigating system wherever the farms have access to a water supply.

Unfortunately many farms are not within reach of any lake or stream and cannot be supplied with water. But every farmer, whether he is engaged in market gardening or in growing fruit, or grain and grass, if he has a sufficient water supply, cannot too soon give to this subject his most careful attention. We do not have rain enough during the growing season. Some years we have enough, often too much, in the early spring and summer, but July and August are the hot months and with abundant moisture would be the best growing months of the year for most vegetables, corn, all the grasses and nearly all fruits. But it is at this very season that all these important farm crops suffer, if they do not die, from want of water. The occasional and little showers that come during these months seldom wet the soil to the depth of more than one or two inches and the extreme heat evaporates this moisture in a few hours and leaves growing crops again to the mercy of the fierce rays of a midsummer sun. The years that this is not the case are the exceptions. The year 1896 was in this locality an exceptionally fine one. Fifteen inches of rain fell between the first of May and the first of September and it was unusually well distributed through the four months. Notwithstanding this favorable season, the experiments made by Prof. King at the Wisconsin experiment station show surprising results from supplementing this large rainfall with an amount of artificially applied water equal to more than half the rainfall of the four months; and while some of this water was applied in the last days of

June the benefits came in the hot weather of July and August. If such increase, as is shown, can be produced by supplementing the rainfall with irrigation, in a year as favorable as that of 1896, then it is certainly wise for all who have the water to make use of it. There is a prevalent but mistaken belief that the farm products in the irrigated regions are of a much more valuable kind than those grown with us. While investigating this matter in the famous fruit growing country of Los Angeles and San Bernardino counties in California we were repeatedly informed that alfalfa was the most profitable crop. The same statement was made to us in the Fresno county raisin grape region. Alfalfa belongs in the family of clovers and in a general way we class it as a grass. It is not better than our red clover. The alfalfa is cut in different localities from three to five times in a season and yields annually from four to seven tons of hay.

We can do quite as well as this with our red clover when we shall learn the value of water upon the clovers and apply it artificially when the crop is in need of it. The reason land values in the irrigated countries are far above the land values with us is not alone the larger yield that comes from irrigation, but the greater certainty of getting a crop, instead a part of one or none. In 1895 there could not be said to have been anything produced in this locality. Nearly the full year's labor was put on the land and lost and such a loss could not but depreciate the value of the land. Every fruit grower knows something of his losses from dying trees, vines and berry plants by the failure of the rains to come when needed. Nearly all our grasses die after two or three years and great loss comes from grass seed sown that never grows at all, or if it starts it dies without returning the farmer anything for land, labor or seed. In short we gamble on the probability or possibility of rain coming when it shall be needed, and, in this game of chance, lose so often that we are kept poor, and land values remain far lower in the so-called rain belt than they are all over the rainless region.

The time is already here when he who succeeds must keep abreast of the best methods, and the farmer is not exempt from this condition by any means. There is no possible doubt but the experiment stations are bringing about greatly improved methods in agriculture, and the wise man will take early advantage of this progress. Every observing farmer knows something of his losses from frequent droughts. The value of water cannot be doubted. What the farmer can afford to pay for water in the rain belt is the question that must first be answered. Professor King has shown some very handsome margins of profit, even in 1896, from supplementing the rainfall with irrigation at a cost of 66.74 cents per acre inch of water (that is, about 27,000 gallons; enough to cover an acre to the depth of an inch).

We did not have accurate means of measuring results at Eagle Heights farm, but it is reasonably certain that we will succeed this year, if we did not last, in pumping 100,000 gallons of water through 1,000 feet of pipe to a vertical height of eighty feet and distributing on the land for one dollar. This is an extreme lift and at a cost of little more than one-third of that at the station. It would indicate that whoever has a sufficient water supply can afford to pump it for irrigating purposes.

As the chief purpose of this paper is to influence those who have water within reach to use it, some facts will be stated here as a basis upon which to build. The land should have upon it two feet in depth of water during the growing season. The rainfall will generally be one-half of it. One foot of water should then be supplied artificially. This should be supplied in three or four irrigations, and usually will be needed in July and early August. From three to four inches in depth of water should be put upon the land each time and always as quickly as possible without washing it. That is from 80,000 to 100,000 gallons of water per acre at each irrigation. These facts are enough to show that it is not worth while to waste either time or money trying to irrigate with a windmill. Usually it will not pump at all

when the water is most needed, because there is no wind; but if there is wind it will not lift to any considerable height enough water to irrigate more than a kitchen garden.

Although there are hundreds of pumping plants in the arid region, the prevailing method is to construct a dam across a mountain stream, thus turning the water from its channel into a ditch. I believe the San Joaquin Valley ditch is more than 250 miles long and carries down more water than flows out of the Wisconsin river. Some of these ditches are very costly. Much of the Bear Valley ditch is cement-lined to save the water. Again, some of the dams are enormously expensive. The Sweetwater dam, with all its connections for handling the water, is said to have cost three millions of dollars. It will thus be seen that irrigation is often very costly in the arid region. In this state most of the irrigation will have to be done with pumping plants. The nature of the country is such that ditching would be more expensive. There are also a great many advantages in one or a very few persons owning and controlling an irrigating plant. With a centrifugal or rotary pump run by a gasoline engine water can be pumped very cheaply. A two-horse power engine and pump can be had for about \$300, and it will pump 15,000 gallons of water twenty feet high in one hour at a cost for gasoline of three cents. Run for twelve hours each day it will cover with water two acres to the depth of nearly three and one-half inches. This will not need another irrigation for from twelve to sixteen days. Hence it is possible by persistent work to irrigate from thirty to forty acres with this inexpensive plant as often as necessary. One man will easily take care of the engine and distribute the water, and, allowing his wages at a dollar a day, the annual cost of three irrigations, amounting to ten and a half inches in depth of water, would be but two dollars per acre. If it is desirable to irrigate a larger tract, with a larger pumping plant, a much greater efficiency is obtained at a less proportionate cost for plant; so that it is possible to irrigate to the depth of a foot during the season, where the water must

be raised with a pump to a height of not more than twenty to forty feet and keep the annual cost as low as two dollars per acre.

These details have been given at such length because so many people regard irrigation in the rainbelt as something too expensive and wholly impracticable. The costliness is, on the contrary, in doing without an irrigating plant when one could be put in at a very low price per acre for the land that could be covered with water. Nor is it true that irrigation in this country can only be applicable to gardening. The fruit grower and the nurseryman can pay the highest price for water. Indeed, the time will soon come when it will be surprising to the nurseryman that he ever tried to do business without having all his grounds under a good water system. Nothing responds to abundant moisture quicker than a tree. Peach trees, pear trees and prune trees, three inches in diameter and fifteen feet high at two years old are only medium size in the nurseries of Fresno, California. Linden trees upon my lawn that have always had an abundance of the cold water of this city are more than six inches in diameter, while others of the same lot of trees, planted at the same time on the farm and which have had only the rains are not yet three inches in diameter. But it is not this greater growth so much as it is the security from loss that the fruit grower and nurseryman should consider. Even if valuable trees do not die from being exposed to frequent and severe droughts, the vitality of the trees is so much impaired that they never return to their owners anything better than vexation and discouragement.

The information gained by four visits to the irrigated regions, and that obtained from numerous station reports, together with the more expensive knowledge resulting from actual experience, would seem to lead to but one conclusion, namely: That in this state greater rewards and fewer losses will come alike to farmer, gardiner, fruit grower and stock raiser when the rainfall shall be supplemented by irrigation. (Applause.)

On motion Mr. Raymer was made an honorary member of the society for the ensuing year.

Mr. Toole—I think that all honorary members should wear badges if we do.

Mr. Hoxie—The motion would suit me much better if Mr. Raymer would pay \$5.00.

Mr. Philips calls on Mr. Raymer to talk on irrigation on his grounds.

Mr. Raymer—I have been having some experiences of my own for the last nine years. I do not advise any one to use a windmill. It does not furnish enough water to be of any value. I tried a steam engine 12 horse power, eight years ago. A year ago I gave it up and put in gasoline 25 horse power 3,600 feet of 6 inch pipe. I did not get it in until pretty late in the season.

Mr. Dartt—How much did it cost?

Mr. Raymer—About \$2.00 an acre. I expect to cover 100 acres, it will cost me about \$200. I use a large pipe. I can lift 30,000 gallons of water.

Mr. Hartwell—Does the temperature of the water make any difference?

Mr. Raymer—It makes a difference, whether you use city water or lake water. Lake water is very much better.

I got from Mr. Converse some strawberry plants that did very well, but every fruit grower knows the trouble about the plants dying when they suffer from the drought, and after I had applied the water one afternoon, I should say 125,000, and did not cover more than two-thirds of that acre, but the next morning as soon as I came in sight of the farm I could see the difference. We left enough water on the ground so that the men could not walk over the ground without going in six inches.

Mr. Plumb—Where is your farm?

Mr. Raymer—Beyond the university grounds. I find that a 4 horse power engine will lift water 40 feet high as fast as two men can handle it.

Q.—This 4-horse power engine would be accompanied by how many feet of pipe?

Mr. Raymer—You could get considerable pipe together with this \$500 plant. Of course in the matter of pipe it would always pay to get large pipe to get rid of the friction of the water.

Mr. Hoxie—While I do not believe much in irrigating with a windmill I would advise it just for the sake of watering his own gardens, lawn and flower beds. I am well paid for the outlay at my grounds. I do not think much of it for irrigating a farm.

Mr. Barnes—I am talking for water on berries. I think Mr. Raymer's paper here when the people read that will study it and put it into practical use it will be worth millions of dollars of benefit.

Mr. Dartt—I admire the facts that were brought out in that paper. I think it is the nicest treat we have had at this meeting.

Mr. Holmes—In this line I would say that my neighbor put in \$400 in an engine, pipe and tank, and it has made their property so much better that it makes their neighbors sick.

Mr. Barnes—In support of this water supply movement, I would like to say I invested about \$500 in a driving wheel and reservoir. This supplied my house, my barn and yard with running water every day in the year, and I think it is the best thing on my farm with the exception of the boys.

HOW CAN WE MAKE OUR LIBRARY MORE USEFUL TO OUR MEMBERS AND OTHERS.

TALK BY GEO. J. KELLOGG.

G. J. Kellogg — This question has been sprung upon me without consultation or knowledge to treat it fairly before this meeting. You all know that our library is locked up, and it is not in a place whereby any visitors or our members can get at it. I understand that the agricultural offi-

cials can accommodate us with some room in their office below, and the only feasible plan I know of to make our library valuable, is to put it in charge of some of their officers or establish a librarian residing here at Madison. I would suggest that we elect our corresponding secretary here at Madison and put him in charge of this library. I do not know of any better way.

Mr. President— The next general subject upon our program will be "Strawberries," treated in sections.

G. J. Kellogg — I do not believe that the majority of farmers would succeed with the pollenizing varieties. For the educated horticultural farmer, I would recommend one perfect and one pollenizer, but while we have perfect varieties that are good bearers, good growers, and healthy in leaf and foliage, I see no reason why we should put the pollenizers in the hands of farmers who will not keep their varieties separate. If a farmer plants his pollenizers for the purpose of pollenizing he must have corresponding rows or alternate those two varieties in a row. If he is growing for family use he must only plant about 200 plants a year to keep up his family supply, and his strawberry bed should be continuous year after year. If a farmer will set his plants out in these two rows, three or four varieties if you choose, but I would restrict it to two, I would name, I will give the pollenizer this connection, I will simply name the Splendid and the Enhance, as the best two varieties for farmers.

President — Before we open this question for discussion, we will hear the other papers or talks on this "Strawberry" subject.

THE STRAWBERRY—HOW SHALL THE FARMER PLANT AND CARE FOR.

PAPER BY D. C. CONVERSE, FT. ATKINSON, WIS.

If there is anything that a farmer hates it is puttering work, and notwithstanding the value and comfort to be derived from a good garden of fruits and vegetables, if the location and arrangement of same is crowded and crammed, it can pretty safely be said that it will be neglected.

Taking it for granted, therefore, that our farmer must have elbow room in order for him to take an interest in and care for his bed of strawberries, the first requisite is for a good location.

If possible, land that has been thoroughly manured and worked with some cultivated crop for a year or two should be selected and as near the house as can be to aid about picking and far enough away so the poultry will not harvest the crop.

If the land is plowed in the fall, again plowed early in the spring and at once thoroughly pulverized, it will be in the best possible condition for setting and for holding moisture.

Plant in rows as long as possible, about four feet apart and 15 to 18 inches in the row. This distance between rows is a little greater than growers usually plant, but the idea is to get them in such shape that the farmer can get the cultivation done in as cheap a manner as possible. With him it is not so much the amount of land taken up as it is to save in the labor of growing.

Planted as above the cultivating can be done largely with a sulky cultivator and as easily and cheaply as so many rows of corn. Care, of course, is necessary in cultivating to keep the ground as level as can be and not ridge it up along the rows.

The cultivation should be so frequent that ground may be kept light and fine and the weeds killed just as they start.

One hour's work at such time may be worth five a few days later.

As soon as ground freezes cover the bed with marsh hay or straw—old straw bottoms making an excellent mulch.

In the spring after growth commences, loosen up mulch only enough to let the plants up through. The mulch thus left serves the purposes of holding moisture, keeping weeds down and having the berries free from dirt.

Another bed should now be started alongside the former and treated as before.

After picking the crop on the first bed an easy and satisfactory way to treat, is to mow and then when a dry windy day is at hand burn over. This disposes of the weeds, mulch and insects that may have been on the plants and if properly done, no injury comes to the plants.

The bed should be at once cultivated, cutting the rows down to from 8 to 12 inches and the rows hoed.

The width mentioned may seem rather great but unless we have more rain in the fall than has come for the past few years, the rows will remain about as they are.

A liberal application of well-rotted barnyard manure should now be applied and worked in. The importance of thorough work here is seen when we remember that on the vigor, thrift and growth of the bed in the fall depends the yield of the following year. Cover in winter as before.

The third spring finds the farmer with a new bed and an old, thrifty, vigorous one to pick from.

A new bed should again be started so as to get in position to have a bed to plow up each year and a new one coming on.

After fruiting the old bed the second time it is usually good policy to plow up at once and put in some catch crop like fodder corn. There is time for a big growth before frost.

As a rule if beds are run longer than two picking seasons, they get foul and weak and too much work is required to keep in good bearing condition.

At least, I am sure if the foregoing plan is practiced, it will be found more satisfactory in every way.

Another strong advantage is in always having a supply of new plants to be hand to put out each spring and of as good quality as can be bought.

The varieties to be planted should depend largely on the varieties that have been tested and found to do well in one's own locality. These will be safe to plant every time.

After deciding on the varieties to be planted great care should be taken to get them true to name. Don't waste your time in cultivating plants that you know nothing about because they are cheap or because you can get them for nothing.

Having secured the desired varieties plant 3 or 4 rows of each variety together and mark them so that you may know just where to get the desired plants at any time. By planting as above pure plants can be taken out in the middle of the block.

An easy and simple way of marking is to take strips of old zinc, write the name of the variety with common lead pencil on it and nail to a stick which can be driven into the ground at the end of the row.

Many a farmer has said. "I can't grow strawberries. I went over to my neighbor's, got some nice plants that he was going to throw away. They grew well and were blossomed full but there were no berries."

The cause of such failures is readily seen to be in the failure to start right.

Let no farmer be discouraged by past ill success for with proper selection and care he can grow an abundance of this, the best of all berries — the strawberry.

STRAWBERRIES — THE BEST FOUR FOR DISTANT MARKET.

BY J. D. SARLES, OF SPARTA.

Next time please ask me an easier question. Should any apostle of horticulture rise up and answer this question so that all fruit growers shall say "amen!" then truly will ye say, "A greater than Solomon is here." We all have our favorite berries and what is bread for one is often a stone for another, sometimes made stone by one who should have made it bread, other times made stone because the conditions of soil, climate and environments are more favorable for stone than fruits. The *best*, as I take it, should have other qualities besides simply being a good traveler, some berries love to travel, they are like the Scotchman who said "He was always most at home when he was abroad," or like the Frenchman's chicken that required three weeks after dressing to ripen so that it *might* become palatable.

We have berries that will stand shipment side by side with marbles and when at the end of their destination are even better than marbles for the table, yet we are alive to the fact that if you take the "go" quality out of the berry we are all up the stump. The berry like the preacher, has its mission. "Go ye unto all the world." If it won't obey or cannot be made to obey that command then it should be spelled with a "u" and sent to the rear to seek its cemetery — local markets at least are limited to light demands; the "World is my parish" should be the motto of every fruit grower. Until men are born again and made new creatures they will not raise their own fruit — turned out of the garden in which there were all manner of fruits, — *because of sin*.

Man must be made over again before he will seek to enter his Eden. Some men must consent to become missionaries and to carry or to send the fruits of Eden to the hun-

gry world. And if like Joseph whom his father sent to carry refreshments to his brethren who were watching and shepherding their flocks in distant fields, we like him should through envy be taken and sold through commission men, down into Egypt. And even into prison, it is in God's power to put us on Pharaoh's Throne, and through the wisdom, prudence and foresight usually possessed by horticulturists we may be able to save both Egypt and Israel, when we shall be able to overcome the prevailing famine for fruits, and turn the wilderness into fruitful fields, and fill the land with plenty and receive the blessing of Him who said "I was hungry and ye fed me, sick and in prison and ye visited me with the flowers and fruits of Eden. Inasmuch as ye did it to the least of these my brethren, ye did it unto me" a noble work. Instituted by and honored of God — We are given long arms to reach the ends of the earth by sea and by land and with improved and improving transportation facilities the flower may not wither, and the fruit may not decay, before their fragrance and lusciousness shall be inhaled and tasted, by our brother at our Antipodes, but you reply — what kinds? What kinds. The best four for distant markets — I am reminded of Lincoln when asked how long a mans leg's ought to be, his laconic reply was this, "Well, friend, all things considered I think that a mans leg's ought to be just long enough to reach the ground."

The best four for distant markets are the four that will get there. On the table of the consumer a big saucer full to every member of the family covered over with rich cream, sprinkled over with fine white pulverized sugar and lifted to his mouth with a silver dessert spoon, will after the first taste say "Wife, where did this Angel Food come from. "Dear! that fruit came from our brother at our Antipodes, just 12,000 miles away." "Well, wife, let us sell all that we have got and give it to the poor, and go to the land from whence that came, and if we find that it is not heaven, it will be so much like it that we will not know the difference." Now as to the name of these four kinds,

they are not written in the name of the Chronicles of the Kings, has not every fruit grower got them written in his own book and on his heart, and will he change one iota of his writing or opinion to conform to the view of this writer. Every man's wife and mother, is the best wife and mother in the world. I am glad it is so — we preachers when we get into the brush — tell our experience, that helps us and them who hear us. My horticultural experience extends a little over 10 years — hence I cannot be regarded as authority. I have shipped my berries to distant markets and no kinds have behaved better with me on their picket line duty than the old fashioned Wilson Albany — and its Crescent mate, and the Warfield and its Michel Early fertilizer. I have no doubt that there are better ones than these named, but I prefer to speak of the things that I have seen and do know, and only these things declare I unto you.

Have tried Enhance, Van Deman, Belmont to take the place of Michel Early without improvement.

STRAWBERRIES — THE BEST FOUR FOR NEAR MARKET AND HOME USE.

TALK BY FRANKLIN JOHNSON, BARABOO.

In the first place we want a hardy, vigorous plant, and in addition to that we want one that is productive, then we want a berry that is of good quality, and we want a plant that will have plenty of berries, and that has a long season. As I consider the pollenizers the most important, I will name them first. First on my list I name the Crescent because it responds so readily to generous treatment. The plant, as you know, is not very large but is hardy and vigorous. These plants are like men, "You can not tell by a man's size how much work he can do," and we have a

kind of an idea that a large berry plant will bear more than a small one, but the Crescent although young and comparatively small, it begins to grow, if you pinch off the runners, it will throw up another crown, and I do not know of any other plant that you can get a more vigorous growth than from the Crescent. The Crescent bears a big crop in favorable season and in seasons when others would fail why the Crescent would do very well. I do not know of anything that is more productive in quality. Many people think that the Crescent is of poor quality, but my observation is that the Crescent is a berry of the best quality, and for a berry that you want the most of I do not know of anything ahead of it. It is sour just before it is ripe, it has a pleasant acid, and most of the fruit was eaten with sugar. The markets will buy ten times more of Crescents than fancy varieties. We must treat the Crescent well, we must give it generous treatment.

Now when the season first opens and berries are high, 15c or 20c, although your berries look beautiful, you do not want to pick them — not until they are ripe. It don't pay. They may sell at 15c but your berries are now double the size by that time, and there will be a great demand for them. I like the Crescent, it has a nice, bright color and it holds its color if taken to the market. It is one of the first to ripen. Next to the Crescent, I would name the Haverland. There is not the demand for the Haverland that there is for the Crescent for which there is a big demand. It is also a bright berry. I do not like it much myself. Now this subject of the pollenizer depends upon the two you name for your pollenizing plants. If I put down Warfield instead of Crescent as I should have if I lived at Baraboo, because there is an advantage in having a pollenizer that is the same size and appearance as your pollenizing plants. We have one which is our most vigorous pollenizer, the Lovitt. If you want some large fancy berries I would depend on these pollenizers for them. I used to recommend the Cumberland on account of its size, and could never quite discard the Brandywine, which has come out lately and is almost identical in size and shape.

DISCUSSION.

Mr. Edwards—Can you ship the Haverland?

Mr. Johnson—You cannot.

Mr. Hartwell—Do you think the Brandywine is preferable to the Warfield?

Mr. Johnson—Not for canning. If you want a canning berry raise the Warfield by all means.

Mr. Plumb—I would like to ask Mr. Johnson why he recommends that the pollenizing berry should be smaller than the pistillate and of the same style.

Mr. Johnson—I do not very strongly recommend it, although there is an advantage. If a person gets a nice box of strawberries, and there is one kind on the top, and he comes down to another kind (although the other kind may be equally as good) he feels it is a cheat.

Mr. Plumb—Is it not for the influence on the pistillate?

Mr. Johnson—No, no.

Mr. Plumb—I suppose Mr. Johnson was referring to a very valuable point, that is, whether the pollen does actually give the quality to the fruit. I have found that some of the eastern growers are using as firm a berry as the Old Wilson to give the Crescent berry firmness.

Allow me to say a word in regard to the beds. Had it not been for this process in '95 the fruit crop of '96, the 12 or 15 acres in my vicinity would have been a total failure. I have a light sub-soil plow which is run by one horse. I run it back and forth 10 inches to 12 inches deep. I give them a renewal of the bed.

Mr. Sarles—I have a sub soiler. I run it backward and forward and I loosen the clay soil. If the water goes down 20 inches, the roots will go as far as the soil is loose, and if it is two feet they will find it. I have reasons to believe that the best thing of any one thing I have seen or heard of is three horses and a sub-soiler, then cultivate in the spring. The second crop will be better than the first.

Mr. Hartwell — I would like to say a word regarding the trouble with the leaf roller. I had not seen it until last year. A lady visited my place and said, "I think you have the leaf roller." I was scared to begin to investigate. I found many. Prof. Forbes, our state entomologist of Northern Illinois, was in danger of losing their crop; spraying did not amount to anything when the worm is in that condition, as it is covered up with the leaf. After I learned it was at my place, I investigated and found there was not a plant that did not have it.

B. F. Adams — The leaf roller is a great pest. During the thirty-three years that I have been engaged in growing strawberries, I have been frequently troubled with it. I have mown off the tops of the plants and burned off the ground. I have used a plow; of course that leaves the ground in ridges. I have leveled it by dragging. In all the twenty-five years that I have been raising the Wilson for market I lost one crop the year before last; I did not have hardly any crop at all. Unless some method is employed to check the progress of the leaf roller a crop will be wiped out in a short time.

Mr. Perriam of Illinois — Did I understand you to say, Mr. Plumb, that the fertilizing berries had an effect on the strawberries.

Mr. Plumb — I suppose there is a theory to that effect that some of the eastern growers are holding to.

Mr. Perriam — Fertilizers affect the seed, not the quality. I plant watermelons, and squashes and cucumbers, all in one patch. They will be entirely their own kind, but if you plant the seeds of these, they will be mixed. A medium fertilizer has no influence upon the flavor or quality of the fruit.

Mr. Adams — Does this pollenization have any effect upon the flesh of the berry?

Mr. Perriam — It does not.

Mr. Hatch — Prof. Goff was about to rise, and I would like to hear from him in regard to the leaf roller and what his conclusions are.

Prof. Goff—As I understand it is a separate and distinct species from the apple leaf roller. My experience has not been very serious. We are in the habit of cutting off our plants, and burning up the parts that we cut off, and I must say that we are very much pleased with this practice.

Mr. Hatch—While you are on your feet will you suggest some method of doing this?

Prof. Goff—I mow our bed right over, then I leave the plants until they are dry. Then we rake them in between the rows. We have on a few occasions injured a few rows of berries.

Mr. Hatch-- Do you care anything about the direction of the wind?

Prof. Goff—Our experience has been that it does not burn so rapidly as to do any harm.

Mr. Perriam—In regard to pollenization. There was a statement in the "Rural New Yorker" where an apple had looked like a pear. It was considered so remarkable that it was sent to Prof. Bailey, and he wrote "This is one of the rarest cases of pollenization I ever saw."

In regard to the melon, I have come to the conclusion that sometimes the melons are influenced in flavor by the pollenization of the current year.

Mr. Sarles—While this question of pollenization is being discussed, I would like to ask Prof. Goff whether we may not be aided in pollenization by letting the bees loose, and letting them have their way to go from one flower to another.

Mr. Hartwell—Certainly; yes, sir.

Mr. Kellogg—There are two instances that I have struck this year where the aphid that works on the roots of small crops has destroyed an entire patch of strawberries, as the midge some ten years ago. One gentleman told me that he had taken the blossom from the strawberry when it was turning brown and had shaken out the eggs of that little insect. This little midge is about the size of the head of a pin. It is a little fly and it is all over the fields, and in

the clover blossoms. It was the black aphid that worked on the roots and all at once they began to disappear or die in 1896.

Prof. Goff—In regard to the leaf roller I think we can poison them. They do not roll up in the leaf until they have eaten one-third of the leaf.

C. E. Tobey—Do you know anything about thrips?

Prof. Goff—I know they did a great deal of damage in our state this year, more than ever before. We have records where crops have nearly been destroyed. They are always rolled up in their leaves until they get their growth. I do not know as I can give you a remedy for this insect, it is very difficult to destroy, even under a Bell glass it will resist the rays focused on it. We cannot use kerosine emulsion. It will injure the blossoms. It does not eat very much, it rather sucks the juices out of the stamen.

Mr. Dartt—How large?

Prof. Goff—Very minute. You will have to look close to discover the damage they do, the petals seem to be broken.

Mr. Plumb—I would like to ask if the thrips can be destroyed by spraying?

Prof. Goff—I doubt it for the reason that we had abundant rains this spring.

Mr. Dartt—How would it be to spray before the buds open?

Prof. Goff—They are not present before the buds open, I found there were very few thrips on them until they opened.

Mr. Dartt—Do you know much about the eggs?

Prof. Goff—I do not.

Mr. Dartt—Are the thrips the same insect as the striped weasel?

Prof. Goff—I think they are.

Mr. Read—I would like to say a word on the question of a little while ago, the question of pollenization and hybridization. I made quite a little study of the hybridization and pollenization of plants, and I can hardly agree with

our Chicago friend, and I differ with Prof. Goff in his iron-clad rule. It is a fact, in spite of all the professors in the world, that a man in breaking up all species and making new classes—he is making entirely new classes, and it goes to prove that there is progress in this world.

C. E. Tobey—I visited the Illinois State Society this winter and there were delegates from Missouri, Michigan and Iowa. They all complained of the damage done in the winter of '95-'96 to the strawberry plants. Not only in Wisconsin was the damage great, but in every state from Texas up. Now we have all thought here that the plants went into the winter so dry and the winter of '95 and '96 was so severe. Our strawberry plants all over the state gave poor satisfaction. I think Pres. Kellogg had some trouble, and I do not think there is a grower in the state that did not have some trouble. As a rule it seemed as though the plants went into the ground in dry condition, because the severe cold would not kill them in Arkansas. I think the drought killed them.

THE SAN JOSE SCALE.

Prof. Goff—I suppose you have all read about it. It is known to have appeared in at least fifteen different places in Illinois, I would say also Ohio and in Missouri. Whether it is in our own state or not, we do not know positively. It is supposed to be in Iowa, there is no evidence. I will say that this insect is most formidable. It attacks not only fruits and plants, but apple, peach, plum and pear trees. It is a matter of great importance to us. There is one thing in our favor in regard to this insect. It does not spread very rapidly. If we find it trying to destroy a tree, we can get rid of it. If we do not get rid of it, we will have a hard battle. I shall be as brief as possible on this point. I attended a meeting at Chicago of horticulturists and entomologists from and including Ohio, Illinois, Michigan, Wisconsin, Minnesota, Missouri and Iowa; all were

represented. They met for the purpose of drafting a bill to be introduced into the legislature at the first opportunity for the enactment of certain laws to make it possible to inspect the nurseries, also to create a commissioner to inspect all nursery stock. This is a large undertaking, but we will have to choose between this system of inspection, or the loss of our orchards, so I was requested at this meeting to put this before our people and have them appoint a committee, and have the committee introduce it into the legislature, and we hope to have some laws passed for our relief. The second point is that, owing to the interstate commerce laws we cannot exercise control over trees and plants that are introduced through other states. We cannot say the to people of New York, that they shall not ship to Wisconsin, they have the right to do so. We also have no control over the mails. This insect may be sent through the mails. On this account we need national legislation, we need to have authority to look after the mail matter. We need to have authority to prevent stock from leaving the nursery that is known to have this insect. This same committee of which I speak agreed to recommend to their various state horticultural societies the appointment of a delegate to meet in Washington on the 25th of March (for the benefit of the reduced railroad rates) to see if some appropriate bill cannot be formed and presented to congress that would be passed in time to protect us the coming year. I will leave a copy of this here, and any one who wishes to read this bill will have the privilege of doing so. I move that a committee be appointed to examine this bill carefully, and present it in such a way if possible that it will receive attention from our legislature.

Motion seconded.

Mr. Hatch—I move that this matter be referred to the committee on Legislation.

Prof. Goff—I would call attention to the specimen I put up there on exhibition to be examined. That is full grown.

Mr. Perriam—I was going to offer a few remarks. This

scale is one of the most formidable and terrible things. It differs from oyster shell bark louse by being round.

President—Motion with amendment as offered by Mr. Hatch, that it be referred to the committee on Legislation, is accepted by Prof. Goff. (Motion carried.)

Prof. Goff—In regard to the second part of this question, I would move that this society appoint a delegate to meet the delegates of the other states in Washington on the 25th of March as proposed in this section. Seconded.

President—It has been moved and seconded that this society appoint a delegate to meet with the other delegates at Washington on the 25th of March.

Mr. Kellogg—I would like to ask if the university board would not stand the expense?

Prof. Goff—I could not answer that question without conference. I could not promise until I have had a conference.

Mr. Homes—I move that we appoint the professor to be the delegate.

Mr. Coe—It seems to me that under the existing circumstances we ought not to consider the question of funds so much as we ought to consider the question of safety to the horticultural interests of our state. This society has funds enough to send a delegate to Washington.

Mr. Holmes—As I remember 20 years ago I lived in Michigan. The yellows struck. I saw the most beautiful patch of berries that could not be eaten. They were infested by the yellows.

On motion Prof. Goff was selected as delegate to Washington.

Prof. Goff—I believe there is a report of the finance committee due at this time. Is the chairman, Mr. Johnson, present.

Report given.

On motion the report of the finance committee was adopted.

Mr. Plumb—I hope that you have not forgotten that I have not accepted the appointment of judge on the fruits.

It is necessary for me to decline. I cannot be chairman of that committee.

President—At the time I made the appointment, I was not aware that Mr. Plumb was an exhibitor. Under the circumstances I will make another appointment. I would appoint Mr. Johnson of Baraboo, and Mr. Parsons of Eureka.

THE FRUIT GROWER'S BRIDGE OVER HARD TIMES.

BY A. L. HATCH, ITHACA.

The fruit grower's bridge over hard times is simply revenue. To have revenue is to grow fruit and sell it at a profit, to make some gain over its cost. To do this means to make a business of it—to adopt business methods. It is not business like to plant a few trees or plants of a kind and many kinds for profit. While there must be quantity enough in the aggregate to reduce the expense of handling, transporting and marketing, there must be enough of one kind to please customers and give some confidence to the salesmen. Want of uniformity, continual change in the market offerings from day to day is to make succotash of the business and hash of its results. In the apple, cherry or plum orchard, 25 trees of a kind are few enough, while 100 are far better. It is no more expense, usually, to carry a wagon load to the home market or shipping station, and to have less fruit at a time is making uphill business.

Again, it is not business-like to over-plant—to set too many trees upon the land—to have them too close together. It is much more unbusiness-like to plant the apple and cherry in the garden where it is over-cultivated, over-fertilized and is sure to spoil the garden. To plant them in the lawn, about buildings, among shade and ornamental trees is to blight every prospect of profit. This over-planting is carried to an absurdity almost everywhere. Various influences contribute to this result, not the least

being the advice of this society and the tenor of many essays delivered before it and published in its transactions. To these we have added the self-interest of the tree peddler and nurserymen to crowd as much as possible to increase sales of fruit trees. We believe, however, that it is mistaken economy to plant closely and expect that trees so planted will protect one another from the so-called sunscald of winter.

As a sample of the extent of close planting, I lately measured a piece of land of a little over two acres, containing a farm orchard. I then took an inventory of the trees, buildings, etc., upon the land and computed the amount of ground actually needed and found that the orchard was over-planted three times; that is, there were trees enough to plant three times as much land as they occupied. Suppose a farmer wishes to go into the dairy business and determines to grow his cows from calves; when they are small he places three of them in each stall wide enough for only one cow and then grows them there until they are mature. It is possible to do so, but we imagine the resulting cows would be rather flat and slab-sided specimens. And yet such a proceeding is no more absurd than that of over-planting our orchards as we have heretofore done.

There is another influence which has a great bearing upon this matter of over-planting, and that is the popular belief that fruit trees will die out anyway in a few years and it is necessary to plant some every year to keep up the supply. Having once entertained this belief it is very natural for us all to do our best to confirm it. We not only over-plant but fertilize in such a way as to injure the trees and so cultivate as to make the trouble worse and bring blight and other griefs. Having once prophesied evil it is human nature to prefer that evil befall than to have our prophecy fail. If we say we are all going to the eternal bow-wows, we shall be more delighted to see the whole raft sail into that haven of rest for dead ducks, than to have any doubt cast upon our ability to foretell disaster.

In order to have a good bridge the foundations should be well laid. This means a good common sense business start to make common sense business of fruit culture. The right way is to grow into the business rather than to buy into it or invest into it. To work into it gradually, not but what returns may be had and a business fully established in a reasonable time, but it is neither necessary or desirable to invest large sums of money to establish any one in fruit culture. After a start in strawberries, raspberries and blackberries, the grower should produce his own plants for renewal and enlargement of his fields of those fruits, as he can grow far better plants and vines for his own use than he can buy. It is businesslike to plant more strawberries every year, and to renew raspberries every five or six years, always choosing new land isolated from the older planting as much as may be to secure immunity from insect and fungus diseases. By purchasing by the thousand, trees and plants can be had from good growers for such low prices that the first cost per acre of planting may be reduced to less than one-fifth of the amount heretofore expended for such purposes.

Suppose a man concludes that he has a suitable site for an apple orchard and wishes to make a business of apple growing. Now, if he will carry out my plan he will plant the orchard and then let it grow to him rather than to wait for it to bear. He has, say twenty acres of land that he uses for ordinary farm crops; he has tools, implements, stock and team to carry on his farm. He purchases 1,000 apple trees and no more for planting upon this land and sets them thirty feet apart each way, exactly 48 trees per acre. Now he has four trees in the place of nine as heretofore recommended to plant, 20 feet apart, and he thus reduces the cost more than one-half per acre, to say nothing of the difference in first cost by the thousand as against rates by the dozen or hundred.

After planting, he crops and cultivates the land just about the same as he has done, getting about the same return per acre as he would if he had no trees. Now he

has no additional expense to speak of after planting, and gets returns from his land and labor upon it just as he would anyway, and he has had to invest in no new tools, implements or fixtures to speak of on account of the trees. In other words, he does not wait for the orchard to fruit but lets it grow to him. Of course, as a good cultivator, he will give preference to such excellent orchard crops as clover, beans, peas and potatoes, and remembers that a proper rotation of crops increases the fertility of the land from year to year, and that by the use of land plaster upon the clover, peas and beans, plowing under a second crop of clover will give a splendid foundation for a healthy apple orchard, far better than can be produced by the use of animal fertilizers. In this way the apple trees will be in fine bearing condition in five years and are worth two dollars each, and upon the same basis, at ten years the orchard will be worth \$250 per acre and will capitalize for that amount from the fruit they bear. Under proper conditions and carried on under this plan, there is no branch of farming so attractive as this—that will give a surer revenue or a greater season of leisure upon the farm each year.

This coming spring I shall see to the planting of several large orchards upon the Door county peninsula upon this plan. In one orchard of 2,000 trees there will be 500 trees of a kind—only four varieties. Now you will want to know at once what those varieties shall be, but I shall tell you that they may be any four varieties of twenty kinds all of considerable excellence. I do not lay so much stress upon having any particular variety as I do upon treating what is planted with such management and such conditions as that particular kind requires. If a man has but four varieties that he can grow and will more easily learn to grow them to their best than he could if he had many kinds.

Making a business of fruit culture means co operation. If the grower is in a place where others are engaged in the same business it is easy, practical, and very desirable

that he join with his neighbors in many ways for mutual advantages. Especially is this true of the buying of fruit packages, tools, etc., shipping and marketing, as well as in waging common warfare upon insect and fungus foes. During the last season by my arranging, my neighbors and myself were enabled to purchase the apple barrels we used, at a saving of five cents each over what we had previously done. Upon the 2,500 purchased that meant a saving of \$125.00. By joining together and shipping in car lots only, we were enabled to make a further saving of 20 cents per hundred on freight. Upon the eleven carloads we shipped there was a further saving of over \$600, thus making a saving of over \$700 for myself and neighbors. My share of this saving was \$300 and that of my neighbors \$400. In other words I was worth \$400 to my neighbors and they were worth \$300 to me. I recommend this feature to you.

Possibly you will ask by this time, will it pay? After a season of that like 1896 no doubt many conclude that fruit culture doesn't pay. If there is any branch of business that has been especially brilliant during the last year, please tell me what it was. The fruit grower who had his house in order certainly need not have fared worse in 1896 than others have. Notwithstanding low prices my own experience has been very favorable. Surely I cannot complain when for the price of a single bushel of cherries as I sold them I was able to buy 32 bushels of oats, nor shall I complain of my small fruits that sold for enough so the price of a single bushel paid for 20 bushels of the same grain delivered at my granary. Nor shall I complain because I had a very large crop of apples that sold at a very low price. They grew for me last season with very little help from me — my labor was simply harvest — they grew, anyhow, and when at the close of the season I had several hundred dollars from them. Among them I remember there was a carload containing 170 bbls., 10 of which were Lubsk Queen that made a sale, the whole car, at an advance of \$25.50 and that surely made me feel very kindly toward

the trees that bore the apples. When two barrels of the same variety in another car sold for nine dollars and the commission man wrote me they were the prettiest apple he ever saw, I very naturally desired more of them.

WEDNESDAY EVENING SESSION,

Feb. 3, 1897

President Kellogg in the chair.

William Toole of Baraboo read a paper on the subject:

SUCCESS WITH FLOWERS.

BY WM. TOOLE, OF BARABOO.

As with many another occupation, "there is no royal road to success" in flower growing, and if there seems to be magic in the touch of your friend, who always has such good luck in raising flowers, it is not because of the possession of any particular secret of management, but rather the love of these floral friends prompts faithful attention to the little things that make up their daily needs.

The novice with more enthusiasm than love for or knowledge of flowers, should not attempt too much at first. Rather let love and knowledge grow with experience lest occasional indifference may lead to neglect and disappointment.

Our subject is a broad one, and we may not get over the whole field, so commencing at one side we will begin with summer annuals. But first, let us say, don't forget to have a lawn. If the making is yet to be done, look over past volumes of the reports of our Wisconsin State Horticultural Society and there may be found the best of instructions for preparations and care of a lawn.

Our annuals must all be raised from seed, and as these are usually small and generally expensive, it behooves us to give them more careful attention than is needed for farmers' ordinary field crops.

The best conditions can be furnished in a specially prepared bed which can be sheltered and shaded as the changes of weather require, preparatory to transplanting to the flower garden.

The larger seeds like four o'clock, double sunflower, nasturtiums, morning glory etc., can well be started where they are to grow, unless it is desired to have them early, when advantage can be taken of the hot bed, cold frame, or window in the house. Some things like poppies, mignonne and annual larkspur, do not bear transplanting so readily as others, but even these do well if properly managed.

Our nursery bed for seeds, should be shaped much like that of a cold frame, only we omit the glass covering unless earliness is desired, in which case we may have a glass over a portion or make a small hot bed, but ordinarily these will not pay for the extra expense. With a frame made by setting up a board six inches wide on edge, running east and west, and another board twelve inches wide north of it nearly four feet from and parallel with it, we may make our bed long as needed closing up the end with boards to keep the wind from driving through. Then for covering to give shelter and shade, we need to take eight lath, four to be full length and the other four cut to three feet. With these and a few small wire nails we can make a double thickness frame a little more than four feet long and a little more than three feet wide, having placed the lath on each other so that the ends shall lap over those crossing at the corners. With any kind of cheap sheeting tacked to this frame we have a cover for one section of our bed and covers may be provided in numbers as necessary.

The seed bed should be fine and rich, well pressed down after being stirred, and surface made very even before sowing the seeds.

The even surface is necessary so that very small plants in the hollows may not be drowned out when watering, leaving the higher places too dry.

It is better to sow all of our seeds in rows and it would be well sometimes to sow some of the finer seeds, like petunias, in little boxes that more special care may be given to watering and shading.

These very small seeds should be sown in the faintest of furrows imaginable and be covered only by pressing the soil smoothly down over them. The larger seed should be covered in depth equal to about twice their diameter.

It is better to sow near together seeds of kinds which take nearly about the same time to germinate, because we must plan to harden off our plants and get them used to air and sunshine as soon as possible after they are well up, as it is difficult to care for one or two rows which are slow to come up, differently to the others.

All seeds of the cruciferous order, like ten week stock, alyssum, and candytuft, come up in a few days, and plants of the dianthus family nearly as soon, asters, daisies and some others come up in a short time, while verbenas, pansies, petunias and many others take much longer to come up. Some heat loving plants like amaranthus, celosia and many of the tender climbers should not be sown too early or they may rot in the same temperature that would best suit the pansies and pinks, or if coming up be chilled during cold wet times we often have in spring. An old stunted plant is never so good as a thrifty younger one.

Some of our agricultural experiment stations or some one of our horticultural students might do the public good service by preparing for us a tabulated report of the results of experiments, showing the comparative time of germination of different varieties of flower seeds under like conditions, also another, showing degrees of temperature best for germination of different kinds.

In ordinary weather our cloth frames will furnish all the shade necessary with sufficient watering, which should be done with a very fine nose on the watering pot, and the spray kept constantly moving that no place be drenched.

If weather is very drying it may be necessary to spread sheets of paper under the cover and directly over the seeds.

Don't depend on rain for watering unless certain that it will be light. Heavy, packing rains sometimes leave the ground in such condition that it is impossible for small seeds to come up. Better leave the covers on during the storm and do the watering yourself.

After the plants are up, if there is danger of frost, the covers may be left on at night for protection, but otherwise used only as shading through heat of the day, gradually shortening the time until plants can bear full sunlight. If seeds have been sown thinly and well cared for, the young plants are soon ready for transplanting to the garden, which should have been prepared in advance, and if air is dry and plants come up with little soil, sprinkle the roots with water and shake fresh soil on as soon as taken up.

If too early to set out in garden, or if plants have been crowded or if kinds which are difficult to transplant, then they may with advantage be replanted in another part of the bed, and when they have made a good supply of feeding roots they can much more safely be moved to the garden.

The amount of shading and watering necessary after planting depends on weather following, but plants should not be allowed to wilt, and don't shade with inverted flower pots, tin cans or any close vessel which vessel may become overheated in the hot sunshine. If plants have come to you from away off it is probable that the roots are in poor condition, and it will pay well to nurse them in such a bed until feeding roots have been formed, when they can safely be potted or set out in the garden as required. If you have bought high priced strawberrrr or other plants it will pay well to give them a start in this way. Your early tomato or cabbage plants can be profitably hardened off in such a frame.

After the annuals are out of the way perennials may be sown in the same bed and be plenty early enough to transplant and make strong plants for next year's flowering.

If you choose to have flower beds in the lawn, better have a few large beds than many small ones. If too much

cut up the appearance of the lawn is spoiled as well as making its care more difficult.

While we think of perennials as plants to last for years, most of them need to be renewed by division and all must be kept free from weeds and grass or we soon lose them.

It is better to have a border for shrubbery than to have much of it in the lawn both for appearance and winter care of such as need protection.

We are unfortunate if we have no place for climbers, and a place should be provided for a few, to include at least, climbing roses, cobeia scandens, clematis paniculata and morning glories.

All that has been learned of soil, mulch, surface cultivation and the like should, be put in practice in the flower garden until the plants cover the ground and hinder the stirring.

Watering is often overdone by those who have facilities for applying it, but there is probably no one who over-cultivates. In our summer garden we should not omit some of the tender perennials usually grown in the house, like heliotrope, scented geraniums, lemon verbenas, lantanas, jasmine, etc.

If poultry and dogs trouble the flower beds keep them out with a fence of 18-inch wire netting. Red spiders are probably the most troublesome insect pest in the summer garden, and they can be kept in check with repeated sprayings of cold water.

The best way to end this paper seems to be to cut short off and pass by selections of varieties, sub-tropical plants, fall planting of bulbs, and care of house plants, so we will close by saying, don't too long delay setting out the bulbs, and begin this spring to get plants ready for next winter's blooming.

UNUSED POWER.

MRS. FRANK WOLCOTT, APPLETON, WIS.

A tourist passing through China at the present time, says, "Strange, but in all China we have yet to find a single instance where advantage is taken of the numerous waterways to furnish power. Oil mills, grain mills and weaving and spinning shops stand in countless numbers on the very bank of powerful streams, yet all are operated by hand." The power is there broad rivers flowing to the sea with tremendous force and volume but unapplied and useless through the stupidity and ignorance of the people.

Kipling says:

"The 'Eathen in 'is blindness bows down to wood and stone,
'E don't obey no orders unless they is 'is ownn."

and he employs no power but that of his own hands, makes use of none of the advantages that civilized nations find a source of wealth. And the condition of these same people is worse than that of our beasts of burden.

But is it not worse than heathenish blindness when intelligent men fail to make use of power that is a source of health and happiness, of comfort and prosperity to themselves and their families; one which is refining and elevating in its influence, and which if it does not bring wealth at least brings satisfaction and content in its wake. There is not a person in this audience, perhaps not one in the state, but would willingly concede that horticulture is such a power.

All the tender memories of our childhood home are associated with the thoughts of the fruits and flowers, the trees and vines which grew around the old home.

One of the grandest writers of our time whose touch on the heartstrings is the most tender, has given the name of a common bush to his best known work.

"There grows a bonnie brier bush in our kail yard,
And white are the blossoms on't in our kail yard,"

And Marget Howe writing to poor Flora Campbell to persuade her to come back to the stern old father on whom she cast the "Black Shame," says to entice her back to the glen,

"The glen is bright and bonnie noo' for the purple heather is on the hills,

And down below the garden corn wi' bluebells and poppy flower between,"

and all writers bear witness to the tender memories Nature's handiwork evokes; that it is a wealth-producing power the thousands of carloads of fruit shipped in from distant states attest. On the principle that a "penny saved is a penny earned," what a loss our farmers suffer from neglect of this important industry.

That it is neglected a ride through the country in any direction would convince one, if in any doubt on the subject.

In his report for '91 to this society Mr. Hill of Rosendale, says: "Let me tell of a few things I saw in a 75 mile ride through one of the finest sections of the state. There were appearances of wealth and prosperity, fine dwellings and great barns were the rule. We passed 145 farm residences, where a fair view was had of the surroundings. A few old apple trees remain on most farms, a good many young fruit trees were planted but generally had an appearance of being starved and neglected.

"About one place in ten did not show the least sign of a garden. One in twenty showed an asparagus bed. Four in the whole lot had currant bushes. One had a first-class garden for vegetables and fruit except that it was not properly cared for." One farmer in 145 with a good garden, and that not properly cared for.

Did the other 144 farmers realize they were robbing their families of one of the chief pleasures of country life, "That love of home is one of the profitable things that spring from a garden?" That,

"Wealth can not atone
For cheerless memories of home."

A bare, bleak homestead is not the one the wandering boy's heart turns to with loving memories. Perhaps the boy might not have been a wanderer if the home had been more attractive. That this neglect comes from ignorance seems improbable in view of the labors of this society to interest farmers in horticulture. For over thirty years as a society it has labored to impress on the minds of the people, that

"He who plants a tree plants a joy,
Plants a comfort that will not cloy."

Men devoted to the cause have given us the benefit of their experience, have told of their successes and failures, have taught when and how to plant, and most important of all what to plant and how to care for, have given lists of the most hardy varieties of those best adapted to the different localities in our state.

Local societies have been organized and through them many families reached who would not otherwise have been awakened to the importance of the subject. If there were only more of these societies, that their work could be farther extended, for it is through them the majority of the farmers who have taken any interest in fruit growing have been reached. It is enthusiasm that is needed; getting people interested in the work. One may know something of the subject, but knowing and doing are far apart. "Knowledge is power," but if it is unapplied it is like the power of the rivers in China, useless.

There must be a brain to think and plan, but a hand to put into execution is an important factor in the result. "Knowledge is power," "Labor is worship," are truthful proverbs, which if wedded would bring forth grand results. Any man who has intelligence enough to raise a good crop of potatoes can, if he will, grow gooseberries, cherries and currants, and Duchess of Oldenburg and Whitney No. 20 will grow and bear abundantly for a man as shiftless as Miss Ophelia thought the St. Clairs, and when one once has tasted the pleasures of gardening it grows on them.

You would find him inquiring for a good winter apple, hardy, a good bearer and a long keeper. Then he would begin to appreciate the labors of this society in that direction. His family, like *Oliver Twist*, would ask for more—a strawberry bed for the children. His wife if any like my husband's wife, would want an asparagus bed. She must have sweet apples to bake, vines to twine around the porch, trees for shade and ornament, pansies for memories and roses for fragrance, until before he knew it he would be a full-fledged horticulturist with an ideal country home, worth hundreds of dollars more than when he commenced, and with the added consciousness that while providing for the comfort and happiness of his family the world was better for his labors.

For he who plants a tree, he plants love,
Tents of coolness spreading out above,
Wayfarers he may not live to see,
 Gifts that grow are best,
 Hands that bless are blest,
 Plant life does the rest.
Heaven and earth help him who plants a tree,
And his work its own reward shall be.

THE WAYSIDE PATH.

BY MARY C. JOHNSON, OF BARABOO.

Gentlemen of the Horticultural Society:

I have not come here to speak of apples nor berries, neither of fruit nor flowers. Yet, nevertheless, I have come to call your attention to a subject which concerns you as land-holders, as public-spirited citizens, and as chivalrous gentlemen.

I will take only two or three minutes of your time, and I hope to plant a thought-seed which will take root and grow.

I want to plead for a wayside path in outlying districts

which are not within the jurisdiction of city laws or village regulations. You know a few years ago a wave of æstheticism swept across our country and carried away our roadside fences. Men who were in the habit of escorting their wives and daughters on their weekly shopping excursion, arrayed in blue overalls and red leggings and guiltless of collar and necktie as Oscar Wilde on the no-fence question, and waxed enthusiastic over the beauty of fenceless scenery. But in a year or two these same men forgot the location of their boundary line. Not knowing when to stop plowing, they plowed until they reached the wheel-track.

Consequently our children in going to school must choose between walking in the mud and dust of the highway or in the mud and dust of the plowed field. They find not a blade of grass, not even a bit of Roman wormwood, on which they can rest the sole of their foot.

It is not my present purpose to advocate the restoration of fences, though perhaps this would be the easiest and best solution of the problem. Of course fences in themselves are ugly, but nature soon remedies that by hiding their uncouthness beneath a graceful drapery of vines. And really I do think that a fence thus festooned with woodbine and wild grape is prettier than rows of denuded corn-stalks or beheaded cabbage stumps.

I am told there is no law to forbid the plowing up of the roadside so we who plead for the establishment of a wayside path must choose one of two methods: either we must have a state law made, or we must depend upon arousing a spirit of chivalry among our hand-holders that will render a law not necessary. Having planted this seed I leave the care of it to you. It needs prompt and energetic action.

I hope you gentlemen will not think me lacking in courtesy if I say that, with the exception of the present company and other noble-minded and kindly-disposed men like you, I should feel a little more secure leaning upon the arm of the law than upon the arm of chivalry.

DISCUSSION.

Mr. Hoxie—I think the lady has struck the key-note of success in the work she has undertaken here, for it certainly must be a labor of love, and I was looking around to see if I could not see the face of our Senator Timme to tell us something about the wayside paths in Germany. While she was reading her paper I remembered a very pleasant conversation I had with him while riding on the train at one time, and I wish to tell you something he said to me about the wayside paths in Germany, because they are not like the ones Mrs. Johnson described here tonight. He tells me that the wayside paths there, where people travel more by foot than we do by rail here --are provided with seats and benches, under overhanging vines and trees where the traveler can partake of fruit. They are allowed to eat all they want, but are not allowed to take any away. But the trees that bear the fruit and the vines by the wayside, are for the people there. I do wish we might do some such labor of love for home and country here in Wisconsin as they do in Germany; that we would not only have the wayside paths, but would have the fruit and the vines to overshadow us on a hot, sunshiny day.

Mr. Philips—I will say, Mr. Hoxie, that I practice that a little myself. One of the ladies spoke about the Whitney No. 20. I have Whitney No. 20 trees planted all along the road, so that all can stop and pick apples; and my boy says that the minister stops there occasionally and picks apples,—and we think it is all right.

Mr. Toole—I do not know that we can make much progress in the way of legislation in defining what are the rights of the adjacent land owners and what are the rights of the general public. But I like this spirit shown in Germany. I think it would be an excellent thing if we in our part of the world could do this, and have wayside seats and platforms so that the children could halt occasionally and shake the mud off their feet, and start off again with renewed energy on their way to school.

It seems to me as though the rights of the land owners as regards the use of the soil clear up to the track is greatly exaggerated in some respects. I have in mind one man who to secure his rights has planted his blackberry patch clear up to the wagon track.

Mr. McKerrow — Isn't that so the people can get their fruit without getting out of their rigs?

THE PLUM CURCULIO.

BY H. B. RICE, OF LEWISTON, ILLINIOS.

The plum curculio, *Conotrachelus nenuphar*, as you all know, is one of the snout beetles belonging to the family Curculionidae of the order Coleoptera. It is a native of America and is said to be generally distributed from Canada to Florida and as far west as the Rocky Mountains, although in certain sections of the country it is still unknown. As plum orchards take the place of the scattering wild trees the number of plum curculio increases on account of the more abundant food supply.

The mature beetle is about one-fifth of an inch long, of a grayish brown or blackish color. It has a black shining bump on the middle of each wing case, behind which are a more or less distinct band of dull ochre yellow and some whitish marks.

The characteristic mark of the female on the plum is a dot with a crescent shaped mark around it. The dot is the mouth of the pit about a sixteenth of an inch deep where the egg is deposited. The egg is undermined by the crescent cut so as to leave it in a sort of a flap. One female lays from fifty to one hundred eggs at the rate of five or ten a day, varying with the weather. The eggs are pearly white, large enough to be seen with the naked eye. In three or more days according to the weather the egg hatches into a tiny white larva, which burrows about in

the fruit from three to five weeks, until it is full grown, when it is about two-fifths of an inch long; about this time the plum falls and the larva emerging from it burrows from four to six inches in the ground, where it makes for itself a chamber and enters into the pupa state—a month later it comes out of the ground a mature beetle. During the winter it hibernates in some secluded place under a chip or some rubbish as a mature beetle.

There is but one crop of curculio a year, although the egg laying extends over quite a long period. In 1889, C. P. Gillette, of the Iowa station, noticed the first punctures May 25th, and as late as August 14th fresh punctures were found. The beetle are most numerous early in the season.

The curculio larva is destroyed by two or three kinds of ground beetles and by the larva of the soldier beetle, the perfect beetle of which may be seen on the golden-rod during the summer. Some other insects as well as two species of parasites are known to prey upon the larva of the curculio. A minute yellow thrips is said to devour large numbers of eggs.

There are several ways in which the curculio may be held in check with more or less certainty.

I think that it is now generally acknowledged that the use of arsenites on plum trees for curculio is of little avail. The larva cannot be poisoned as it never appears at the surface of the fruit as does the larva of the codling moth. Prof. Weed, of Ohio, sprayed an orchard of Early Richmond cherries three times in 1889, with London purple, one pound to a hundred gallons of water, and succeeded in reducing the damage from plum curculio 75.8 per cent.

Advantage was early taken of the fact that the curculio when alarmed, folds its legs and snout under its body and drops to the ground. Fighting the pest by jarring the trees and catching the beetles is still considered about the most successful way of checking its depredations. Various devices are used for this purpose. The sheet used at the station last spring is fastened on a circular frame, twelve feet in diameter made in halves held together by two

hinges, one in the center and the other at one side, the opposite side being left open for the entrance of the tree. A flap is provided to cover the opening where the tree enters. The inside pieces of the semi-circles are extended a foot beyond the circumference each way for convenience in carrying. A stay runs from the center of each of these pieces at right angles to it to the circumference. The circumference pieces are one-half inch by three inches, and the other pieces are inch by three inches. The mallet used for jarring the trees is a two by two by twelve inch head carefully padded at each end, fastened on a one by three inch handle.

Great care must be taken in jarring the trees not to injure the bark. A good sized limb may be cut off a little way from the trunk and the striking done on this stump. Some advise boring holes in the tree and inserting iron pins to strike on. The jarring should be done rather early in the morning as the beetles fly readily at midday. It is of no use to jar on windy or rainy mornings or immediately after a cold rain, but the catch is usually good on the first warm, still morning thereafter. Jarring on favorable mornings should be continued from three to six weeks.

Another very important part of the fight is the destruction of all of the infected plums as soon as they fall, so as to allow none of the larvae to get into the ground. This seems quite as essential as the jarring.

Many have found yarding chickens around the trees to be an effective means of getting rid of the curculio. Young chickens are good hunters and will make pretty clean work with the insects.

The plum curculio also does much damage to the pear, apple, peach, cherry, nectarine and apricot.

DISCUSSION.

Mr. Hartwell — We had a paper in our Northern Illinois Horticultural Society on this subject of plums at our last meeting, and a statement was made there that I would like to have this gentleman or Prof. Goff, or some one who may have experimented, comment upon. He contended that he could spray the plums shortly after the insertion of the egg, or immediately after the hatching of it, so that it was possible to kill the grub of the curculio. His evidence was that by repeated experiments he found that the grub did not develop; that he had many plums at this time that had been punctured, but that the puncture amounted to nothing more than a scar, and the grub had not developed. Now this is a new thing to me. I would like to know if any one here could confirm that, or has had experience enough to deny it.

Mr. Toole — I think it is a fact that a great many are punctured, and yet the eggs will not develop in the native plum. I would like to know if he drew his conclusion from experiments with some of the native varieties fruits.

Mr. Hartwell — He was not there himself and could not answer our questions.

Mr. Toole — I think it would be very easy for one to form a wrong conclusion from the native plums.

Mr. Hartwell — I should think from the way his paper was written that he had experimented. He had on his list the DeSoto, the Lombard and the Wolf.

Prof. Goff — I would like to ask what he experimented with.

Mr. Hartwell — With an arsenite-London purple or Paris green. He used at the same time a Bordeaux mixture, and he demonstrated that the rotting of the European varieties could be hindered by careful spraying with the Bordeaux mixture.

Prof. Goff — That is possible; but I was wondering if he really used enough of the arsenite to kill the insect, and

if so, if it would not poison the plum. I have never known an experiment to be made in that way.

Mr. Hartwell — It doesn't take a very large dose to make a breakfast for the curculio.

Prof. Goff — I presume not. Whether or not it is practical I do not know.

Mr. Hartwell — I never did it, but his experiment would seem to indicate that there might be something in it.

Prof. Goff — As a rule it is very difficult indeed to destroy the insects that are inside of the fruit or inside of the stem or the trunk. We cannot get at them. I do not know why the plum curculio should be an exception to this, and yet I do not know enough to contradict it.

Mr. Hatch — Before an army can hope to be successful I believe they have to send out spies to ascertain the situation of the land and hunt up the enemy, reconnoiter, get positions; and it is a good deal so in horticulture. These little insects we have got to find out all about. We have got to know what their habits are; we have got to know when they are asleep and when they are awake, and when they take their breakfast, and how and where they take their breakfast. A great many things get confused simply because we do not know about some of these points. There has been a great deal of dispute about the curculio and possibility of spraying it to kill with arsenites. Now I think the solution of the question lies right along the line of this fact, that some plums send out foliage before they bloom, and some bloom first. Take our American varieties, and I think it is not possible to spray successfully because they bloom before they send out foliage.

Mr. Geo. Kellogg — Yes, sir.

Prof. Goff — I was going to say that I suppose this apple curculio may be destroyed by the same means as the plum curculio, but as the apple trees and the apples are not worth as much as plums, we do not generally think it worth while to go to the trouble. I may suggest, however, that chickens will probably destroy this apple curculio as they do the plum curculio. One of the best remedies I know

of for the plum curculio on a few trees is to keep a coop containing a hen with her chickens under it just as long as is possible through the summer, and the chickens will take care of the curculio.

Mr. Geo. J. Kellogg — If you jar them?

Prof. Goff — If you jar them or if you do not.

Mr. Geo. J. Kellogg — But what if you have two hundred trees? We have disposed of this curculio very easily with the jarring process. I gathered by actual count last summer two hundred of the insects within two weeks, and formerly I had been spraying for them, but was not successful in making any headway.

Prof. Goff — I would say in regard to the jarring process that we have found it very useful, and still not entirely successful. I was somewhat disappointed in applying it the first time. We applied it very thoroughly; I suspect we did it rather more thoroughly than the average plum grower would do it. We did not fail any morning for several weeks, no matter how cold or how rainy, and still we found there was a very considerable number of plums stung. And the same has been true since. We find that the jarring process is largely successful; that is, we can grow fair crops of plums by using it,—and yet, there will be a very considerable number on every tree that are destroyed.

I wish to emphasize one point in Mr. Rice's paper. He said we should not depend upon the jarring process, but should also destroy all the infected plums. I think this is very important. The reason I say this is the fact that a friend of ours at Sturgeon Bay, Mr. Moulton, does not use the jarring process at all, but depends wholly on gathering all the infected plums every morning and burning them up, and he grows a crop of plums every year, while his neighbors lose their crops by the curculio. I think it is a good practice to adopt, not only with the plum curculio, but with other insects. Do not depend on one remedy when we know of two. When we are as thorough as we can be, there will still be enough insects that will escape.

Mr. Tuttle — I have found the most effective remedy

against the curculio is a good frost. Year before last frost destroyed our whole apple crop, and the year before that, I had at least a hundred Duchess trees, and there was hardly a marketable apple on the whole lot,—they were stung so by this apple curculio. But that frost used up the grub. I had a very large crop of Duchess last year, and they were very fine. And it was just so with the codling moth. I didn't find one on any of the apples on my place last year. Before that they took half to three-quarters of the fruit. Year before last, in 1895, I only found three apples on my place that matured,—one Longfield and two Duchess.

Mr. A. D. Barnes—I want to suggest that I believe the most practical way to fight these codling moths—plum curculio—is by planting those varieties that are not susceptible to their ravages, or at least susceptible to the ravages of the curculio. I believe that our American varieties are much more liable to the ravages of the curculio than the European varieties. I fruited something less than twenty American varieties, and some of them were absolutely free from any ravages, while my Lombards close by were nearly an absolute failure from this same trouble. And I believe there are varieties that are really practically free from the ravages of the curculio.

Mr. Hatch—I only wanted to ask Mr. Tuttle, since he considers the frost the best remedy—have you any ready-made frost?

President—Mr. Hatch asks if you have any ready-made frost.

Mr. Tuttle—Well, we are not certain about that always. We take it when it comes; but I will say this with regard to the plum curculio, that it doesn't sting but the best grades; that they are good judges of quality, and that they have very little to do with many of the wild plums that are propagated.

Mr. Toole—In regard to these fruits being curculio proof—we all remember the days when we raised spring wheat. We thought we had got a kind of spring wheat that would

withstand the ravages of the chinch bug, and the chinch bug would take the part they didn't like if necessary, and so it is with the codling moth; they will take the second choice rather than go without.

Mr. Tuttle—The damage done by the codling moth is not by the first crop of moths. I had in 1895 a Duchess tree that bore a good crop of fruit, and the only tree I had that bore a good crop of fruit, the codling moths went for, and where heretofore I had been unable to find any codling moths I found four in one apple. They hadn't apples enough to go around and they filled the whole tree. The first crop of moths were all destroyed in that first crop of apples. They had nothing for the second crop to go into and of course we didn't have any apples. In the fall we find that the apples that are wormy are those produced by the second crop of moths. They come out about the middle of July and there is no attempt to destroy them by spraying. As the frost has given me an advantage over them I propose to follow this up by putting bandages around the trees, and giving them a chance to go into winter quarters under these bandages. The bandages protect the tree from the snow, and at the same time gives you a chance at the codling moth in its hiding place. You have all the time from the first of November until the next May to examine these cloths and kill the moths. I sprayed a tree thoroughly with London purple, and I don't think there were a dozen apples on the tree that were not stung. In the fall I went and laid a corn sack in the crotches of that tree, and the codling moths that went in there to live over the winter I counted, and killed over three hundred; so I think there was enough in that one tree to kill the whole orchard.

WHAT I HAVE LEARNED OF THE DWARF APPLE.

S. H. MARSHALL, OF MADISON, WIS.

Mr. President, Ladies and Gentlemen:

While going through the nursery on the experiment station farm late last summer I was very much surprised and pleased to discover some small trees or bushes bearing fine apples; and upon consulting Prof. Goff found that they were of several varieties, amongst which were Atkinson, Dickey, and Green Russian; all grown upon Paradise stock and had been planted there about four years ago. There were some six of the trees, not over five feet high, and each tree bore from half a peck to half a bushel of very nice looking apples. To me, whose garden is a back lot about 50 feet square, it opens up a new field, and immediately the question arose, can these little apple trees be successfully grown in this state? It is the information that I have obtained in answer to this question which I propose to give you this evening, hoping that it may be of interest to some, and cause a few to think more favorably of this manner of growing apples.

The Paradise apple, which furnishes the stock upon which the smallest of the dwarf apples are grown, and which seems to be the only stock successfully used in this country, is, I presume the oldest of all apples as it is said to be the apple of Adam and Eve. The name "Paradise Apple" has been transferred so many times that it may be said to cover a class rather than a variety.

The dwarf apple has been known for centuries to gardeners, and used extensively in the old countries, where it seems to be more successful than it has been here, as yet. Thomas Rivers, the great English pomologist, says of it, amongst other things in his "Miniature Fruit Garden:" "Apple bushes, always very pretty and productive trees, may be planted three feet apart, row from row, and three feet apart in the rows, and when eight or ten years old every

other one taken out and transplanted to new ground six feet apart each way, which gives 1,210 trees to the acre."

He had a plantation of 100 of these dwarf apples which were planted in 1862. They bore a fine crop in 1863 of most beautiful fruit, and in 1864 gave a crop almost too abundant. It might be interesting to state here that this same gentleman grew an apple tree in an eight inch pot that bore fruit when only nine inches high. Another Englishman grew an average for ten years of four pecks to a tree or 320 bushels to the acre. These are only a few of the many men in the old country who grew the dwarf apple to their advantage, but it is what they have done in this country, and what our prominent pomologists say, that we are most interested in.

Prof. Bailey has been familiar with the dwarf apple for twenty years and has known some good commercial results to be obtained from it, but he advises, "If you grow at all for market, only those varieties should be used that are suitable for a very fancy or desert trade."

Patrick Barry, in Barry's Fruit Garden, says of the dwarf apple: "We know of nothing more interesting in the fruit garden than a row or little square of these miniature apple trees, either in blossom or in fruit. They begin to bear the third year from the bud, and the same variety is always larger and finer on them than on standards. We have had Red Astrachens on Paradise stock that measured eleven inches in circumference."

Jno J. Thomas, in "American Fruit Culturist," says: "For summer and autumn sorts dwarf apples are valuable for supplying families. They begin to bear in two or three years from setting out, and will yield a bushel or more to a tree in five or six years,—where well cultivated."

W. C. Strong, in "Fruit Culture," writes as follows: "Paradise apples, set eight feet apart each way, are well adapted to garden culture, giving the advantage of early fruitfulness and increasing the number of varieties that can be grown on a limited space. Constant watchfulness will be required to give annual supplies of food, to pre-

serve the form by pruning and also to prevent rooting above the dwarf stock, which, of course, will destroy its character."

In Bulletin 116, Cornell Experiment Station, Prof. Lode-man gives from his experience and information obtained by correspondence with men who have grown the dwarf apple throughout New York state, the following as to its cultivation:

"All the varieties of the Paradise apple that are used as dwarf stock, can be propagated by layers or mound layering (same as used with quince and gooseberry), or by suckers and cuttings. While the dwarf apple tree never makes a rank growth, as the stock serves as a check to the return passage of the sap, yet it should be thoroughly pruned from the time it is set, because sometimes the vigorous growth of the cion seems to stimulate the growth of roots of the stock and you will soon have a large tree if not severely cut back. We should also prune to produce more wood that is capable of bearing apples, and because fruit spurs will be more evenly distributed over the lower part of the tree. The trees should be pruned in the shape of a bush with branches if possible not higher than ten to twelve inches from the ground and these branches should always be retained. The trees should be planted eight to ten feet apart each way. They bear in from three to five years, and when eight to ten years old they should bear from two to three pecks, and increase as they grow older. They fruit more regularly than standards in New York state. They are more easily sprayed, taken care of, and it is more convenient to thin out the fruit." He further says: "I cannot advise the planting of dwarf apple trees for commercial rewards, but it seems to me nevertheless that they are worth experimenting with for this purpose."

I wish to make just one more quotation, and that from John Grape of this state, in an article in one of the last numbers of the "Rural New Yorker." In referring to a photograph which accompanies his article he states, "that this apple tree is a Yellow Transparent on Paradise stock

which was planted in the fall of 1894, and at this date (July 6th, 1896) is five feet eight inches high; stem two inches in diameter at the base and there are 27 apples on the tree. He further states that they have four of these trees, that every one bore, and that they are loaded with fruit buds for next season."

We have here, and at the experiment station nursery, proofs that the dwarf apple will grow in this state. Now it seems as though they should be more extensively used, not perhaps as a commercial venture, but by the farmers for their families, by the inhabitants of cities, towns and villages who have their own gardens and raise other fruits for their own table. I am now thoroughly convinced that the dwarf apple will be more common in this state. Taking into consideration that to its early fruitfulness, and beauty as an ornament to the garden, are added the other advantages claimed for it, that of being hardier, fruiting earlier in the season, and the fruit being larger, handsomer and of better quality, and being so much better adapted to the garden from its dwarf habits both above and below the ground.

It is surprising that these little trees are not more cultivated, even if they do not give large crops of apples, or pay in a commercial sense, for there are so many people who are restricted in the amount of ground they can cultivate, and who might have so much pleasure and profit in raising a part or all the apples they may want for their own use. We all know of the satisfaction derived in growing our own flowers, vegetables and fruits, and if we can add the apple to our list of garden fruits in this state, it will fill a vacancy that has long been felt. Even a man of mature age can plant dwarf apple trees with the anticipation of reaping some of the benefits himself, and not with the sole idea of doing something for the exclusive benefit of his children.

DISCUSSION.

Mr. Toole — I do not wish to ask any question, but there are some thoughts suggested to me that I think worth considering. It has been very plausibly pointed out to us what we may do in the way of having these small trees in our gardens, where we could not have larger grounds. But the thought comes to me after learning what can be done in the way of raising these trees. Here is a suggestion for the florist, and I hope the time may come when our experiment station will take hold of our higher horticulture, and I think they will take hold yet and help us to be of greater service to horticultural interests. I hope it will be possible some time for Mr. Cranefield to graft some of our crab-apples on this Paradise stock and show us what can be done in the way of furnishing these flowers for winter decoration. I will be glad to see this work shown at our winter exhibition.

Mr. Tuttle — The growing of the apple upon dwarf Paradise stocks was a thing that was tried some forty years ago here. The attempt was made to grow these apples upon that stock, and they were grown to some extent, but the tendency is to stint the growth of the trees, and of course destroy their vitality, and the first hard winter that came along swept every dwarf apple tree I think that grew in this state; and the trial has never been repeated? They are very nice little showy trees, and they produce generally larger fruit than they do when grafted on common stocks. As long as we can have mild winters such as we have had for a dozen years now, we might grow them grafted upon Paradise stock.

Prof. Goff — I may say that before coming west I visited the grounds of Ellwanger and Barry, at Rochester, and was very much pleased to see that they had a small plat of these Paradise apples, and they were fruiting very finely. I spoke with Mr. Barry about it and he told me this was a method they had adopted for testing new varieties. They could graft one of these with cions which they had received and in

three or four years they were able to test the fruit. He said they were very satisfactory for this purpose. It occurred to me then that this might be a valuable thing to try in Wisconsin, but on further inquiry I was discouraged. I was told that they would not do well, so when I came here I planted a few of them, with the idea only of testing them; and so far as I have seen, these Paradise stocks are just as hardy as any other I have tried, both as a tree and as a grafted tree. This stock seems hardy and the trees that I have grafted on it seem hardy also, though I suppose we have not had a real hard winter in Wisconsin since I came here. It occurs to me that since this stock is found to be hardy here, that it may be an excellent thing for our station to experiment with, for we can secure results earlier, and we can put a great many more varieties on an acre. We can plant them six or eight feet apart, and thus we can test a great many more varieties on the same space.

Mr. Perriam—It is well, I think, to look back and see what history says about some of these questions. I do not want to discuss it, but the history of dwarf apples, and the history of dwarf pears is that they cost about twenty-five cents a piece to produce them. You never can raise commercial apples on Paradise stock, neither can you raise commercial pears. It is not done in the east.

PRODUCING NEW VARIETIES OF FLOWERS AND FRUITS BY "HYBRIDIZATION," NATURAL AND ARTIFICIAL.

BY WALTER J. MOYLE, STUDENT AGRICULTURAL COLLEGE,
MADISON, WIS.

There is, perhaps, no one department of horticultural study or science that affords more pleasure and satisfaction to the true horticulturist than an investigation of the methods employed—either natural or artificial—for the production of new varieties of plants, fruits or flowers.

Of course, there is a long retinue of beauties continuously coming into view, the product of some far off clime, plants that by their oddity or beauty have attracted the loving attention of some wandering Linnaeus, or Humboldt, that are being continually introduced for the consideration and delectation of the botanist.

But aside from these, the almost endless variety which greets the student on every side in the ordinary walks of life, and of which such a very large percentage are the direct results of hybridization, will afford us sufficient material for all we wish to say in this article, especially as we shall confine our remarks largely to that phase of the subject termed *Natural Hybridization*. And if I shall succeed in arousing a desire and determination, especially among the younger members of this society, to patiently plod in this part of the great horticultural field, I shall be satisfied.

Now, I do not wish to have the term "Hybridization" applied in its broadest sense, for that means a direct cross of different species, and while such products have been observed in nature, they are admitted to be the exception rather than the rule.

I will therefore use the term *cross-fertilization*, and note its effect on different families of the same species. It seems as though nature has pre-ordained that this should be the rule very largely in the vegetable kingdom, thus emphasizing the words of Darwin, "Nature abhors perpetual self-fertilization." Reliable botanists tell us, that even with hermaphrodities,—that is flowers that have both of the sexual organs perfectly developed—within themselves—that the arrangement of the organs is often such that the pollen will not effect the stigma of the blossom of which it is a part, or the stigma on the other hand is not in condition to receive the pollen when it is potent. And so the scientific farmer plants a few hills of corn in his patch, that shall come into blossom after the main crop has shed its fructifying shower, to meet later demands and insure a better crop.

So, while from observation we may prove the truth of Darwin's statement, and the more *humiliating* fact, that "Mother Nature" shows a similar abhorrence and scorn for blundering man when he attempts, *ignorantly*, to expedite matters along these lines. Yet, we have abundant evidence to prove that *she* will take kindly to the timely, intelligent wooing, of the husbandman who can enter into her woods.

Insects also cut a very conspicuous figure in the cross fertilization of flowers, how often have we watched the maneuvers of the bumble-bee, as he pounced upon the prim old snap-dragon blossom in the garden. Watch him now: See how dexterously he thrusts his stiff and hairy legs between the tightly closed lips of the flower, how he kicks and pries, and what a fuss he makes about it; at last he disappears, he's down the flowers throat sipping nectar.

How cordially we used to hate the old yellow warrior especially after a close contact with his business end. But here he comes again, he went in head first, but he has to back out and seems to get mad about it, such a buzzing and "humping" of himself, but he is out and off to the next snap-dragon—for this is his snap-dragon day. Eminently fitted for the work he attends to it as he should, and no other insect seems possessed of the requisite power or instinct to successfully undertake the job. Now what has taken place during this bumble-bee episode, simply this; cross fertilization; with his hairy back and legs well dusted with pollen from the last flower visited he enters this and in the struggle the pollen is brushed off his back and legs, and falls on the stigma of the last visited flower but in the humping process of getting out, his back and legs again come in contact with the anthers of the flower, and so he goes forth again well sprinkled with pollen to the next blossom, thus carrying out the great laws of nature.

This procedure on the part of the insects also accounts largely for the uncertainty of seed production, it being a well known fact, that the seeds from the same apple are not at all certain to produce the same variety of fruit.

From the foregoing you will see that it is not necessary that we wait until we understand all the mysteries of artificial hybridization before we undertake the work of producing new varieties, as the main process may be, and often is, performed by our insect friends.

Having determined to try your hand in the business, there is nothing that will yield better or quicker results than the propagation of seedling potatoes or strawberries.

As a beginner how well remembered are our first efforts along this line. Knowing that but few varieties of the cultivated potato will, or do, produce seed, it was necessary in the first place to procure a variety that would do so.

Providence helped us out here by sending a primitive Methodist minister into the village, and with him he brought many primitive things, among them we noticed during the first summer some old-fashioned purple Meshannock potatoes, which produced flowers and seed in abundance. We purchased half a bushel of the tubers, in the spring we planted them in a row through the center of a large field of potatoes containing a dozen or more varieties.

In the early autumn we saved the seeds from twenty balls picked from different places along the row. This seed was carefully freed from the pulp, dried and placed in the seed box. In the following March they were planted in rows in the hot-bed, and when they had grown the third leaf were very carefully pricked out into cold frames. By the first of June they were nice plants, ready to set out in the ground.

The study of the plants began at the second week, while they were still in the hot-bed. The maternal characteristics were plainly visible at this date, as fully one-half of the plants resembled the parent stock with its dark blue stems and glossy green leaves.

At the time of planting in the field small tubers had formed on the plants. Eighty per cent. of these, upon investigation, so closely resembled the original stock that

they were discarded. The remaining twenty per cent. gave evidence of the results of cross-fertilization, and the peculiarities of eight or ten of the different varieties grown in the field with them were easily seen, both as to shape and color, ranging from dark blue or purple to pearly white.

Some of the best varieties of this experiment are still grown, and even though they may not prove to be of any great worth, we still consider the time thus spent very profitable from an educational standpoint.

For a first lesson in natural hybridization try a few hundred seedling potatoes.

In a similar manner we have grown hundreds of seedling strawberries, only one of which we consider worthy of a place, besides its parents. In the eyes of the producer, however, *this berry is a phenomenon*. Having thus, by these and similar experiments, become initiated into the minor mysteries of producing new varieties by cross-fertilization, we should be ready and prepared to take up some things that require more time and patience to carry to a finish. For instance, the apple, pear and plum. Along these lines we believe there is a brilliant prospect before the horticulturists of Wisconsin.

In the past too many of our workers have postponed the undertaking of this kind of work until they have crossed the brow of the hill, and are on the westward slope. The result has been that at the very time they should have been enjoying the results of their labor, like Elijah of old, they are taken from us, and while they may have left their mantle behind, it is seldom there stands near by an Elisha to pick it up and carry to completion the work so well begun. And thus the results that might have been achieved are often lost as far as one worker's experience goes.

Let the young horticulturists of Wisconsin push the improvement and hybridization of our native plum with the intelligence and persistency that our English and French brothers have exhibited, and success will surely crown their efforts.

Before artificial hybridization is undertaken, we would

advise the would-be experimenter to procure some such work as "Sach's Physiology of Plants," "Plant Breeding," by Bailey, or our choice above all, "Plant Growing and Propagating," by Burbridge. In these works complete instructions are given for obtaining successful results.

Some of the best obtained thus far in this country are among the grapes. We have Rogers hybrids, and half a dozen other workers of recent date in the field, chief of whom is Jacob Moor.

Think of the debt of gratitude we owe Crozy for the beautiful dwarf "Comas," and Lemoine for the handsome seedling Gladiolus. But when we come to locating the horticultural wizard of to-day how easily the honor falls to Luther Burbank of California. No one knows what is coming next with the magical sway of his wand. If one man can accomplish so much by "mastering the situation,"

"Let us then be up and doing
With a heart for any fate,
Still achieving, still pursuing,
Learn to labor, learn to wait."

THE GROWING OF PEAS FOR SEED.

BY WILL H. FELLOWS, FOSCORO, DOOR CO., WIS.

The industry of growing peas for seed purposes has received considerable attention, and if handled properly is generally a prosperous business for a person to engage in.

It is prosperous owing to the fact that they generally command a good price, and that they cannot successfully be grown in all parts of our country, on account of the presence, in many places, of the peaweevil, which attacks the pea crop, causing so-called "buggy" peas. That section of our own state situated along the shore of Lake Michigan and comprising the counties of Manitowoc, Kewaunee and Door, is especially adapted to the raising of seed peas, as

in these counties the peaweevil is seldom very troublesome. Especially is this so of Door county, where the peaweevil is almost unknown.

The peas mostly grown for seed purposes are of the wrinkle varieties, which require particular care and attention; they being derived from other and less valuable varieties, are apt to revert to their original variety.

To guard against this reversion the grower must, as soon as the pods have reached maturity, go through his crop and pull out all plants which do not come up to the standard fixed for that variety.

This process is called "roguing," and the grower must have a good eye and considerable experience to be able to perform this work properly and to secure all the rogues which make their appearance. In sowing the peas several methods are used. Some growers sow them by broadcasting and then harrow them in with a common harrow. Others use a garden drill and drill them in, in rows, and cultivate between the rows. Still others use a plow, plowing a furrow about 3 or four inches deep, then sowing the seed and again using the plow in covering.

Either one of these methods is quite satisfactory, though when sown in rows they are more conveniently rogued than if sown broadcast. In harvesting the peas care should be taken that they are not left out in the field during a heavy rain or they will become discolored, which will affect their sale.

When dry they should be hauled in and stored in a dry, airy place until ready for threshing.

The threshing may be done by a machine, but is more often done by flailing, or treading out with horses.

In threshing with a machine the peas are more or less liable to be split.

When threshed they should be milled and then hand-picked until they are perfectly free from dirt and damaged or discolored peas.

They should then be stored in a cool, dry room until thoroughly dry, when they are ready for sale.

Of late years considerable interest has been taken in growing seed peas, especially in Door county, and large crops have been annually grown there.

The seed is usually furnished by a seed company who makes a contract with the farmer, agreeing to pay him a stated price per bushel for all peas raised that come up to certain standard.

Owing to the fact that the farmer did not give the peas the necessary care required, (their method in growing these peas, being exactly similar to the method of growing a crop of field peas) the crops have not been very satisfactory to the seedsman and in consequence, the price paid by them for growing the peas, has been lowered each year, and during the past two years it has dropped from \$1.35 to 85 cents per bushel, so that now it is doubtful if any of these farmers could be induced to accept any contracts for next season's business at this low price. Although during the past season the business of growing seed peas by the farmers of Door county has been very unsatisfactory in most cases, yet there were at least two instances where seed-pea growing was carried on by two different parties in that county with a fair degree of success and profit.

In both of these cases the seed was furnished by a well known firm of Milwaukee seedsmen, and was considered quite pure and clean in every way. In one of these instances the peas were grown in the vicinity of Sturgeon Bay, the seed sown being of the Premium Gem variety.

The ground was fall plowed and cut up in the spring with a disc harrow.

The parties sowed the seed in rows, 3 feet apart, using the New Model seed drill, some of the rows being *doubled*, that is, another row was drilled in about two inches from each of the rows before planted, thus saving space in planting.

In this way ten bushels were sown upon eight acres. During the season a cultivator was run through between the rows, keeping down the weeds. They were also thoroughly rogued, and kept perfectly clean.

In harvesting, the peas were pulled by hand, and were well seasoned before being hauled into the barn. They were threshed with a flail and were afterward handpicked and shipped. The crop averaged about nine bushels to the acre, and sold for \$2.00 per bushel.

In the other case referred to, the peas were grown by the writer in the southern part of the county. The seed sown, consisting of three varieties, namely, Extra Early, Nott's Excelsior and Telephone. They were sown broadcast over about eight acres of land which had been previously fall plowed, and were harrowed in with a spring tooth harrow. They were not cultivated in any way, but received a thorough roguing.

When quite ripe they were harvested by cutting with a scythe and immediately hauled into a dry, airy building and left for two weeks, when they were threshed by "horse power," that is, they were spread out to a depth of $1\frac{1}{2}$ feet, on a tight floor, and three horses driven around on them, until the peas were all tramped out. In this way one man and three horses can thresh out about 40 bushels per day. The peas were then milled and handpicked and then were ready for market. The crop averaged for the Nott's Excelsior variety, 20 bushels per acre. For the Extra Early, 22 bushels per acre and for the Telephone, 18 bushels per acre. The price received for growing was for the Extra Early and Telephone varieties \$1.25 per bushel and for the Nott's Excelsior variety, \$2.00 per bushel. In both of these instances the peas were entirely satisfactory to the seedsmen.

From the facts here given it seems that the business of growing seed peas could be carried on quite successfully by the average farmer, if he would only give the crop the necessary care and attention required.

THURSDAY A. M.

Meeting called to order by the president.

Session opened with prayer by Rev. J. D. Sarles, of Sparta.

President—The first thing on our program is the president's address, which I will give to you without any ceremony.

Friends and Members of the Wisconsin State Horticultural Society: It is with reluctance that I again appear before you as your presiding officer and even presume to address you upon the optimistic side of horticulture, since the great financial depression and low prices of farm and horticultural products of 1896. However, it is with pleasure that I greet you and sincerely appreciate the coming of the time when we as horticulturists are permitted to meet in annual convention that we may strengthen and renew friendship and through friendly discussion stimulate thought and action that will be of benefit to us when we return to our homes.

We should also feel grateful that we as a society are permitted to exist, and are sustained by a liberal appropriation from the state that we may diffuse and spread horticultural information by which many thousand Wisconsin homes may be made more pleasant and attractive by being well supplied with the choicest of fruit and adorned with beautiful shrubs and flowers.

Last year we met under trying conditions occasioned by the drought of 1895, which resulted in a very light crop of small fruits and nearly a failure in the apple crop. From necessity we buckled on our armor, summoned all our courage to face the future in bright anticipation of the fair fruit crop as the reward of our labors in 1896. But again we have met with discouragement in almost a total failure of small fruits, due in a measure to the drought of 1895. This same cause was favorable to the formation of fruit buds for the apple, and those engaged in orcharding have cause to rejoice in an abundant crop of apples, but from

conditions that were apparently unavoidable, realized but little money for the same. With all these discouragements we must look forward to the future with courage, and with cheerful hearts take counsel upon matters that pertain to our individual interests, as well as guarding the interest of every man, woman or child who sows a seed or plants a tree.

While we are yet waiting and hopeful that a wave of prosperity will soon roll over the country, it behooves the horticulturists to study the ways of thrift and economy, for it cannot be denied that as a people we have *not* been *careful* to make the most of our opportunities and live within our incomes.

There is no doubt that this great financial depression will cause hardship and suffering among all industrial classes, but ultimately it will prove to have been necessary that we all learn to live within the bounds of prudence and teach us lessons of strict economy.

The life of the horticulturist is a busy one. It is a trying one. It deals with the stern realities of frost, drought, blight, fungus diseases, insect enemies and many other kindred subjects which require the closest attention. Horticulture teaches men to love their homes. It makes a happy life, a contented life, a useful life. It teaches men and women to love nature and study its laws, to love the garden and the farm with their fresh air and nature's choicest productions—fruits and flowers—these are the wise and good things, which make men and women wiser, healthier, stronger and better.

Horticulture makes the closest observers. It deals much with the health, comfort, happiness of men, and teaches these matters in many ways. It not only covers the production of fruits and flowers but includes vegetables as well, these things which are essential to our sustenance and our happiness. No man when studying fruits, flowers and vegetables can fail to witness the greatness of the Creator in this wise provision for the welfare of the human race. By looking into the past he will discover that horticulture has

made wonderful advancement. Take for example the tomato, a native of South Africa, which was introduced into Europe about 200 years ago. Consider for a moment the wonderful development of this plant from the small inferior sorts growing wild and the now large, luscious tomatoes which find a place on the tables of the rich and poor alike. In this single vegetable we can see what scientific horticulture has done in the way of improvement for the benefit of the human family.

In fruit take the gooseberry, a native of northern Europe. In its wild state a very inferior, small, acrid berry; under scientific methods of development it has become a splendid fruit, grateful in its season, and through jams and preserves spread through the whole year. From the inferior fruit of the wild plant it now produces, through cultivation and crossing, fruit nearly as large as an egg.

Or take the apple, the greatest, most universal and widest known of all fruits. This began as the undesirable, sour crab apple. It is said that savages never improved fruits or flowers. This development, therefore, must come from settled homes, and is the result of an unbroken line of research.

Man watched, and with the assistance of the elements and insects cross fertilized, reproduced and laid down his work to each succeeding generation, and these in turn took up where the dead left them, continued the laborious investigations and so carried the work on through long years and many centuries, the products of which we now enjoy. The great change from the wild crab apple to the Baldwin, Greening, Bell-Flower, Tallman Sweet, and almost numberless other varieties is one of the most successful triumphs accomplished by the patience and perseverance of man.

These are simple illustrations of the development of horticulture in all of its departments, and an assurance that if we conform to the duty we owe our country, our neighbor and ourself, we shall continue to make progress, and develop new varieties of fruits, flowers and vegetables of the

highest type that will ultimately supersede those now in existence.

With the February number closes the first volume of our Horticultural Magazine. While it has not received the support and encouragement we had anticipated by the large increased membership to our society, we believe it has proved a partial success and is worthy of continuance another year. All who may desire cannot avail themselves of the opportunity of attending our annual and summer meetings. To these more especially will our magazine be a benefit by receiving our proceedings in monthly installments together with such other timely subjects as will have a direct influence upon the welfare of those engaged in horticultural pursuits. The work of our society is one of growth and development and each year demonstrates more and more the necessity of a system of direct information and communication, with those who are interested in the growing of fruits, flowers and vegetables.

Your success, your failure, your experience are all needed as the basis of this work, and our society through its reports and more especially our monthly magazine (if continued) to be the means of disseminating this information.

A most commendable work is being done by the "Farmers' Institute" by teaching more economical and better methods of horticulture.

Horticulture has been awarded a prominent place upon nearly all institute programs which has been the means of disseminating horticultural information throughout many parts of the state that our reports do not reach.

We as a society should pay our tribute of respect to our worthy member and superintendent of farm institutes Mr. Geo. McKerrow, who has so kindly co-operated with and assisted in the work in which we are engaged.

Since our first annual meeting death has claimed one of our honorary life members and an early pioneer in Wisconsin horticulture. I refer to Mr. William A. Springer of Freemont.

His was a life wrapt in enthusiasm in the production and dissemination of new seedlings and if no stately marble column marks his final resting place there are thousands of living monuments which will be cherished in the memory of those with whom he was associated in the earlier days of horticulture.

Since the programme has been wisely arranged in bringing to your notice subjects that may require special legislation, I will forego the usual custom and not worry your patience with further recommendations.

In closing I trust whatever legislation you may place for the future interests of our society, let it be wisely done and faithfully executed.

Let no selfish motive swerve you from right or justice but labor as faithfully as did our predecessors for the prosperity and advancement of horticulture.

President—Report of the secretary, Mr. Philips, is the next thing on our programme.

REPORT OF SECRETARY.

A. J. PHILIPS, WEST SALEM, WIS.

In presenting to you my third annual report, I am fully aware that it covers a peculiar period in the history of our society. Vegetation started very early last spring and promised to be an early season, still, I have never known a season when horticulturists were so hurried all through, as the past. A large amount of all stock sold was found to be badly damaged by the last season's drought after it was in the hands of the buyers. Some was planted under protest and some was thrown away, and parties refused to pay bills. This made extra work for shippers as they in turn had bought in good faith much of these goods from other parties. One lot of 5,000 strawberry plants from Michigan came into my county, and not a single

one grew. A bill of \$10.85 I bought where formerly I obtained good plants, the 85 cents worth only grew and the \$10.00 worth was a dead loss, and worse than loss, for in this case, as well as in hundreds of others, it took valuable time to do the work. The summary of reports from our state was poor fertilizing of strawberries and a light crop of other berries, owing to the feeble condition of the vines.

When the report of the apple crop came in, it did not take long to come to the conclusion that the crop this year would be very large and good and our magnificent show at Milwaukee in September verified the fact both in quality and quantity.

The people at Waupaca and vicinity asked to have our summer or June meeting held there, and pledged themselves to furnish twenty-five new members, which through the efforts of some of their leading members they did.

We had a pleasant time there holding one day's session at the beautiful Chain-o-Lakes, where the Soldiers Home is located. It is a delightful spot and the members seemed loth to leave when the time for returning to take the train for home arrived.

The exhibit of strawberries and roses, wild flowers and vegetables, was very fine. As before stated the crop of apples was large, and owing to that fact and the scarcity of money, the price was very low, but many persons who had heretofore stated that apples could not be grown in Wisconsin, changed their minds. The 6,000 bushels raised by our vice president, Mr. Hirschinger, the 4,000 by Mr. A. L. Hatch on the ridge in Richland county, and the same amount by the veteran Mr. Zettle of Sturgeon Bay, the large crop raised by Messrs. Tuttle and Johnson of Baraboo, and by A. D. Barnes and others of Waupaca county, show that the apple district is well distributed over the state.

Our society was well represented at the Minnesota meeting, December last. Vice-President Hirschinger, D. C. Converse, G. J. Kellogg, and your humble servant being present. Their meetings were well attended and very in-

teresting, and their fruit exhibit was very large. Their meeting held in December has many advantages, but it does not test the keeping qualities of apples as well as ours in February. Mr. Latham kindly continues to send their valuable monthly to our members at 50 cents per year. Our bound reports are much inquired for, and I am of the opinion that if the state will give us 5,000 bound copies and give us what the other 2,000 cost to help maintain our new orchard, it will do more good, as very few care to have a report in a paper cover. At our June meeting the question of help to the state society by local societies came up and was fully discussed by those present. We are feeling as though our local societies must do more in the way of furnishing members to the state society, or the latter will be obliged to discontinue the organizing of them, also a free distribution of our reports to their members. This matter was discussed but laid over until this meeting for settlement.

In consequence of this no local societies have been organized the past year.

The plan, as adopted at our last meeting, of publishing a monthly and holding our report back until the end of the year, has resulted in many complaints coming to me from those who have been in the habit of getting our volumes free at the institutes. As usual Mr. Harris, of Minnesota, visited me last season, also Mr. Bush, of Dover, in same state, Mr. Menn, one of our working members of Norwalk, Wisconsin, also.

In September last, in company with Professor Goff and President Kellogg, I visited the Richland county orchard, of which Prof. Goff will explain. As to new fruits, I spent but little time looking them up owing to the fact that last season it added so much to the expenses of the secretary's office, with no pay, only expenses. I have been receiving and planting specimens and continued to experiment on my own and in the new trial orchard and grounds. I have some of the most promising winter seedlings I ever had, on exhibition at this meeting.

Although my friend, Edson Gaylord of Iowa, has come out with a paper regardless of friend or foe, and says that our new seedlings are as a rule worthless, still the fact remains that "Truth crushed to earth will rise again," even though sun-scauld strikes it, and friends Patten, Harris, Zettle, Gideon, Chappell and others are firm in the belief that we can grow as hardy seedlings in the Northwest as can be produced in the world and all these men are working to that end with zeal and energy. I was a little surprised at Mr. Gaylord's paper, but no more than I was when I visited him to find three top worked trees planted in a triangle 16 inches apart to protect each other from sun-scauld. It was a novel plan and will look strange when those trees are 20 years old if they survive the extreme protection, but there is room for all experiments. A man likes to see his work complimented, and I have received many compliments on my report regarding new seedlings, published in the May monthly and in our report for 1895. It is much work and expense to prepare such reports, because, to make them of value, you must visit and examine the tree and fruit and study their history. Hearsay evidence is of no account in such cases.

I have an appointment to visit Mr. Gideon next fall if I live and to see his 1,200 new seedlings from selected, fertilized and hardy seed either in behalf of our state or for the benefit of myself and boys.

The law passed a year ago giving room 207 to our society except when the state needs it for other purposes, is a dead letter to us as far as benefiting our society. It contains our library and now to make more committee rooms, it is divided by a partition, making it useless for holding our meetings, but through the courtesy of the chief clerk of the assembly and Chairman Latta of Antigo, I have been enabled to secure the use of this room for our meetings and our exhibit. We need a room for our library and our meetings when we want it, and we also need a librarian to attend to our books so that visitors can see and refer to them.

A man employed at other work at the capitol could be selected.

One more item, and I will close this report. In my two last reports I stated that the work of the office was increasing, about double of the correspondence there was the first year I had it, and I suggest that the secretary, whoever he shall be, shall be paid so that he can do more for the society.

President Kellogg said two years ago that he should be paid in comparison to other northern states, and last year he said that the salary should be increased so as to require the major part of his time and energies. Last summer, Professor Goff, who is a good authority on such matters, said the secretary should be paid so as to take all his time.

Now, after all this, no change has been made. Reports have been referred to committees and quietly died in their hands without any action. One year ago, in haste, at the close of our meeting we decided to publish a Monthly. President Kellogg said it would make more work. I knew it would, though some said not and thought the \$50 awarded to the associate editor sufficient. After finding how much the work increased more original matter was wanted, and no provision for pay. I concluded to resign. But my friends, who elected me, said I would not be doing right by them nor justice to the society to accept the office, knowing what the salary was, with the new monthly to publish and the new trial orchard to plant and care for, and just at the time the work needed to be done, to resign.

They said, "Go on and bring in your bill," which I have done, and as in my other report I respectfully ask that a committee be appointed to report on this report at once if possible, so that it will be considered before the close of the meetings and all will understand what they are doing.

In conclusion will say that I am willing to do the secretary's work, including care, planting and grafting of the

new trial orchard, in which I feel a deep interest for the coming year, on precisely the same terms, and if there are among the several candidates one that the members think better suited to do the work for the new trial orchard and for the advancement of horticulture in the state than I am, I will render him or her all the support I am able to without taking too much time. All of which is respectfully submitted.

FINANCIAL REPORT.

Wisconsin Horticultural Society to A. J. Philips, Debtor.

To postage from Feb. 8th, 1896 to Jan. 29, '97.....	\$34 74
Printing for the same length of time	35 75
Express and freight	23 35
Miscellaneous expenses	67 82
Salary of secretary.....	300 00
Total	<u>\$461 66</u>

Credit.

Feb. 2d, 1897. Received on salary	\$300 00
Miscellaneous expenses	161 66
	<u>\$461 66</u>

Debit.

Feb. 1, 1897. For work to date on new trial orchard, 12 1-5 days.	\$36 50
Paid for work, trees, express and miscellaneous expenses.....	109 23
Total	<u>\$145 73</u>

Credit.

By drafts to date from R. J. Coe.....	\$145 73.
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President—This report will be referred to the finance committee. The next topic on our program is the report of our treasurer, Mr. R. J. Coe, of Fort Atkinson.

Mr. Coe read his report, which was referred to the finance committee.

REPORT OF TREASURER.

1896-97.

Feb. 6, balance on hand.....	\$1,016 81
Feb. 6, received from state treasurer.....	750 00
Feb. 6, received from secretary, memberships.....	78 50
Feb. 6, received from J. Spry, memberships.....	1 00
June 17, received from H. Floyd, order No. 84 returned.....	4 50
June 18, received from secretary, memberships.....	43 00
June 18, received from state treasurer.....	750 00
June 18, received from W. H. Drake, membership.....	1 00
June 18, received from secretary, membership.....	4 00
June 18, received from secretary, two "ads" in Horticulturist...	10 00
June 18, received from W. D. Boynton, "ads" in Horticulturist	5 00
June 18, received from E. J. Schofield, "ads" in Horticulturist	5 00
June 18, received from Evergreen Nursery Co., "ads" in Horticulturist	5 00
	\$2,673 81
	1,739 60
Bal. on hand.....	<u><u>\$934 21</u></u>

REPORT OF TRIAL ORCHARD FUND.

Feb. 6, 1896, bal. on hand.....	\$391 27
<i>Expended.</i>	
Order No. 51, A. J. Philips, work and expenses on trial orchard	\$50 00
Order No. 58, A. J. Philips, trees, stakes and work on trial orchard	100 00
Order No. 61, Chas. Hirschinger, nursery stock	24 00
Order No. 63, L. G. Kellogg, tree protectors.....	15 00
Order No. 64, A. J. Philips, work and expenses.....	26 43
Order No. 77, A. D. Barnes, trees for trial orchard.....	6 00
Order No. 85, C. G. Patten, trees for trial orchard.....	1 75
Order No. 96, L. G. Kellogg, tree protectors.....	3 00
Order No. 102, A. J. Philips, work and expenses.....	14 50
Order No. 103, Edd. Single, work and expenses.....	35 25
	\$275 93
	115 34
Bal. on hand.....	<u><u>\$391 27</u></u>

1896-97		Dr.
Order No. 17.	Kellogg, L. G., expense, president's office.....	\$25 00
" 18.	Coe, R. J., expense, Minnesota meeting.....	3 14
" 19.	Philips, A. J., expense, secretary's office and salary	144 60
" 19½.	Hirschinger, Chas., expense, winter meeting	5 00
" 20.	Bingham, D. E., expense, delegate, winter meeting	8 51
" 21.	Sarles, J. D., expense, delegate, winter meeting....	3 24
" 22.	Tobey, C. E., expense, delegate, Illinois meeting..	22 43
" 23.	Edwards, F. C., expense, paper, winter meeting..	97
" 24.	Toole, Wm., expense, paper, winter meeting.....	1 45
" 25.	Hatch, A. L., expense, trial station.....	5 00
" 26.	Jeffrey, Geo, expense, premiums.....	22 00
" 27.	Kellogg, Geo. J., expense, premiums and board...	10 75
" 28.	Herbst, J. L., expense, premiums.....	5 82
" 29.	Freeman, G. A., expense, paper and winter meeting	4 32
" 30.	Trevelen, Mrs. Jos., expense, delegate, winter meeting.....	3 95
" 31.	Miss Porter, expense, paper, winter meeting.....	2 22
" 32.	Schofield, E. J., expense, Illinois and winter meeting	7 00
" 33.	Walcott, F. H , expense, delegate winter meeting.	5 87
" 34.	Bonnell, Jas., delegate, winter meeting.....	8 26
" 35.	Cressy, G. A., delegate, winter meeting.....	6 41
" 36.	Hoxie, B. S., expense, paper, winter meeting.....	88
" 37.	Johnson, Franklin, expense, paper, winter meeting	1 45
" 38.	Tobey, C. E., expense, report, Sparta station.....	5 00
" 39.	Dr. Barney, expense, delegate, winter meeting...	6 60
" 40.	Wilcox, W. A., expense, delegate, winter meeting.	5 33
" 41.	Hardin, F. A., expense, paper and report, trial station	18 16
" 42.	Benedict, F. M., expense, delegate, winter meeting	8 28
" 43.	Robinson, N. S., expense, paper, winter meeting.	5 35
" 44.	France, N. E., expense, paper, winter meeting...	3 60
" 45.	France, N. E., expense, board, winter meeting...	4 00
" 46.	Herbst, J. L., expense, plant distribution.....	50 00
" 47.	Capital House, expense, board of delegates.....	131 15
" 48.	Philips, Lulu, expense, paper, winter meeting...	4 88
" 49.	Converse, Daisy, expense, paper, winter meeting	1 28
" 50.	Kellogg, L. G., expense, paper, winter meeting.	4 07
" 53.	Moyle, W. J., expense, paper, winter meeting....	4 00
" 54.	Chappell, F. H., expense, premium, winter meeting.....	1 00

Order No. 55.	Plumb, J. C., expense, horticultural history	\$10 00
“ 56.	Campbell, Mrs. V. H., expense, reporting meeting and R. R. fare.....	50 68
“ 57.	Democrat Printing Co., Horticulturist.....	50 00
“ 59.	Philips, A. J., salary	75 00
“ 60.	Philips, A. J., expenses, secretary office.....	59 26
“ 62.	Kellogg, L. G., expenses, executive meeting and printing.....	8 10
“ 65.	Rich, T., expenses, premiums summer meeting...	2 50
“ 66.	Shaw, W., expenses, premiums summer meeting..	9 00
“ 67.	Churchill, Mrs. C., expenses, premiums summer meeting	8 50
“ 68.	Barnes, A. D., expenses, premiums summer meeting	11 00
“ 69.	Barnes, Mrs. L. W., expenses, premiums summer meeting	5 00
“ 70.	Karns, P. H., expenses, premiums summer meeting	2 50
“ 72.	Kellogg, Geo. J., expenses, premiums summer meeting	27 50
“ 74.	Bendixen, J., expenses, premiums summer meeting.....	4 50
“ 75.	Herbst, J. L., expenses, premiums summer meeting.....	18 96
“ 76.	Campbell, Mrs. V. H., expenses, monthly summer meeting.....	10 44
“ 78.	Kellogg, Geo. J., expenses, summer meeting	9 57
“ 79.	Philips, A. J., expenses, secretary office.....	18 91
“ 80.	Hauser, J., expenses, paper summer meeting.....	8 09
“ 81.	Kellogg, L. G., expenses, summer meeting	5 76
“ 82.	Scoville, —, expenses, board of delegates	15 25
“ 83.	Goff, Prof. E. S., expenses, paper summer meeting	5 00
“ 84.	Floyd, H., expenses, delegate summer meeting...	4 50
“ 71.	Dawes, G. H., expenses, premiums summer meeting	2 50
“ 86.	Marshall, expenses, paper summer meeting.....	9 26
“ 87.	Campbell, Mrs. V. H., expenses, reporting summer meeting.....	15 00
“ 88.	Boycott, W. J., expenses, printing.....	2 50
“ 89.	Bushnell, Mrs. C. E., expenses, paper summer meeting.....	3 40
“ 90.	Benedict, Miss Myrtle, expenses, premiums summer meeting.....	6 00
“ 91.	Philips, A. J., salary	75 00
“ 92.	Democrat Printing Co., Horticulturist.....	50 00
“ 93.	Philips, A. J., salary	75 00

Order No. 94.	Philips, A. J., expenses, secretary's office.....	\$37 07
" 95.	Kellogg, L. G., expenses, executive meeting....	7 80
" 97.	Coe, R. J., expenses, summer meeting and executive meeting.....	19 56
" 98.	Perry, Clarence, premiums, boys' garden.....	10 00
" 99.	Campbell, Mrs. V. H., editing Horticulturist....	50 00
" 100.	Plumb, J. C., expenses, delegate Illinois meeting	5 00
" 101.	Single, Edd., expenses, delegate summer meeting	4 00
" 104.	Edwards, F. C., expenses delegate Iowa meeting.	21 83
" 105.	Converse, D. C., expense, delegate Minn. meet...	17 97
" 106.	Democrat Printing Co., electros.....	17 48
" 107.	Democrat Printing Co., Horticulturist.....	50 00
" 1.	Democrat Printing Co., Horticulturist.....	113 86
" 2.	Campbell, Mrs. V. H., postage and badges.....	11 92
" 3.	Philips, A. J., salary of secretary.....	75 00
" 4.	Philips, A. J., expense of secretary office.....	46 42
" 5.	Kellogg, L. G., expense of president office.....	31 10
" 6.	Hardin, F. A., expense, trial orchard.....	5 00
" 73.	Chas. Hirschinger, balance winter meeting.....	5 00
		<u>\$1,739 60</u>

We, the undersigned finance committee of the Wisconsin State Horticultural Society, have carefully examined the reports of the secretary and of the treasurer of said society for the past year. We have compared the same with the bills, accounts and vouchers and find them correct.

Madison, Wis., Feb. 5, 1897.

FRANKLIN JOHNSON,
F. C. EDWARDS,
W. J. MOYLE,
Committee.

President—Next thing on our program is the election of officers.

Mr. Hatch—Just preceding the election I would ask that the committee on resolutions report. If any action is taken, it is necessary that it is before the election, so we know who is qualified to vote.

The first resolution that the life membership fee be reduced from \$10 to \$5, and the annual fee from \$1 to 50c. I move the adoption of the resolution.

On motion the life membership was reduced as above stated, and the membership fee to remain at one dollar as before.

A recess was then taken to give the members a chance to pay their dues.

After being called to order, Mrs. Campbell said, I would like to say that all those who have resolutions, hand them to the committee on resolutions so they can be acted upon at the noon hour.

Chas. Hirschinger — I move that we proceed to the election of officers in the following order: secretary, 1st; president, 2d; vice-president, 3d; treasurer, 4th; corresponding secretary, 5th.

Mrs. Campbell — Can we do this? We have an established rule for the election of these officers.

Mr. Hirschinger — There is nothing in our transactions to restrict it. I made this motion as all of our best men are candidates for the office of secretary, and if we get one elected, we have the way open for the next best man for president.

On motion the president appointed S. H. Marshall and E. W. Babcock tellers.

Mr. Hirschinger's motion prevailed and the election resulted as follows:

President — L. G. Kellogg, Ripon.

Vice-president — Wm. Toole, Baraboo.

Secretary — A. J. Philips, West Salem.

Treasurer — R. J. Coe, Ft. Atkinson.

Corresponding secretary — W. J. Moyle, Yorkville.

On motion Edd. Single of Wausau was elected as one of the trial orchard committee which now consists of Prof. E. S. Goff of Madison, Rev. S. D. Sarles of Sparta and Edd Single of Wausau.

THURSDAY, P. M.

President called the meeting to order.

MY EXPERIENCE WITH MULCH.

BY A. A. PARSONS, EUREKA, WIS.

Much has been said and written as to the benefits of mulch to retain moisture in time of drouth. Judging from my past practical experience in the use of mulch, which covers fifteen years, it does not prove all that has been claimed for it, and as a result of such experience I am compelled to seriously doubt the many assertions made by my brother horticulturists as to its great benefits in keeping the soil mellow and moist during our excessive drouths. In the past I have said much in its favor and am to-day a strong advocate of the benefits to be obtained from the use of mulch if applied as my past four years' experience has taught me best. But as generally recommended and applied, namely, continuously along each side of the row of our brush fruits and around the trunks of our newly planted tree fruits, I consider it but of little value in retaining moisture and of less value in keeping the soil mellow during our long and protracted drouth.

Much has also been said as to the relative value of the different kinds. Some claiming, and as I once believed to be a fact that green clover was best, but from tests made on blackberries and raspberries I have found the difference if any in favor of clover so slight that it would not pay the extra expense of handling. In 1893 we had fifteen acres of blackberries and raspberries, also four hundred newly planted apple trees mulched with wheat straw, marsh grass and green clover in about equal amounts, as to acreage and quantity, the material used being placed continuously along each side of the rows from four to six inches in depth, we had a like amount in depth around the trunk of each tree extending out each way about three feet. We

also had four acres of raspberries that were planted in rows each way that had about the same amount per acre of straw and marsh grass scattered broadcast and the soil thoroughly cultivated each way. In August of the same year after having suffered from a six weeks' drouth we found on examination that those rows that were treated continuously along and between each hill, a strip of ground three feet wide that could not be cultivated owing to the mulch. The rows filled with suckers and some grass and the soil under the mulch was very hard and dry to the depth of four inches, with leaves and fruit on the canes drying up. But on that part of the field which had the material scattered broadcast and cultivated each way we found the soil mellow and the canes vigorous, leaves fresh and green.

In making a further examination at that time and in September following, we found the soil to the depth of three inches filled with small particles of the material used for mulch, and the soil beneath cool, moist and mellow. In planting six acres of strawberries the same year at Rochester, Minn., that part of the field which was treated with a heavy coating of coarse straw that had been used for bedding horses—the soil was moist and the plants were vigorous after a drouth which extended from May to September 12th. The above favorable condition did not exist in the field of our neighbor, Mr. M. W. Cook, who did not apply any mulch, but in hopes of saving his plants resorted to hauling and applying water which did not seem of much benefit, as the plants on a part of his field died out entirely. The above conditions were found to exist to the same extent in 1894 and '95, and from tests made in 1895 on newly planted apple trees we found that those trees that were not mulched around the trunks but received frequent cultivation withstood the drouth better and made a larger growth than those that had mulch placed around them.

Mr. President, in conclusion I must say that in view of the above facts I am compelled to believe that mulch placed continuously along the rows does not accomplish the great

good in retaining moisture during our excessive drouth that we have been taught to believe; but from the same facts we are forced to believe that by planting our brush fruits in rows an equal distance apart each way and placing the same amount of material for mulch broadcast, with thorough and frequent cultivation each way saves a large amount of hand labor in hoeing, and makes a mulch blanket that not only retains but draws moisture from the atmosphere, and by the above treatment is transmitted to the growth of new canes and fruit, which we must have to make horticulture a profitable business. So satisfied am I of the increased benefits to be obtained from the above method that last spring we took all the material used for mulch from the rows and scattered it between. By doing so we were able to cultivate about a foot nearer the row on each side, thus producing a fine growth of new canes for this season's crop, which we have great hopes of receiving.

DISCUSSION.

Mr. Dartt—I would like to know when he mulches his apple trees? I think he put it too far away from the tree.

Mr. Parsons—I put it on 6 inches deep, 4 feet each way from the tree. I think it a wrong idea to mulch trees that can be cultivated, but if I could not cultivate I would thoroughly mulch them.

Mr. Dartt—What time of the year do you mulch?

Mr. Parsons—Some time in May. If I want to mulch again I would do it after a heavy rain when the ground is thoroughly saturated.

Mr. Storandt—Would you consider it best to mulch before the frost is out of the ground?

Mr. Parsons—I am not talking about mulching trees planted some time, I am talking about newly planted trees.

Q.—How deep do you cultivate?

A.—Two inches deep.

Mr. Parsons—I use a 5-tooth planter and cultivator.

Mr. Hartwell—You want 13 teeth, the smaller the better.

Prof. Green—Land that is well manured with stable manure will stand the drought much better than land that has not been well manured.

Mr. Hoxie—I rise to a point of order.

Mr. Sarles—What kind of a weeder do you use?

Mr. Parsons—I use a Zefron iron weeder.

Mr. Philips—I think we have been very fortunate to have Prof. Green and Prof. Lugger with us, and I move that we make them both annual members, (including Prof. Green's wife).

Mr. Lugger—Thank you for the compliment.

Prof. Green—It has been a pleasure to me to meet so many of you old wheel horses of western pomology, and in behalf of myself and wife thank you for this compliment you have bestowed.

Next subject on our program is a talk by Professor Green on Russian apples in Minnesota.

RUSSIAN APPLES.

BY PROF. S. B. GREEN.

I have not written a paper on this subject as I thought a better way would be to tell you of the present status as I look at it, of Russian apples in Minnesota. Of course we all know that Russian apples have had their supporters and opponents, and many bitter controversies have arisen over them. However my subject is not that of discussing the whole apple question in the northwest, but only the present status of Russian apples in Minnesota. Several hundred varieties of apples have been brought to us from

Russia and it seems to me one of the most important works the experiment stations of this section can take hold of is the sorting out of this great list. Some varieties of this list go under several different names, and it seems to me almost foolish to make a report on any variety until it has come into bearing. Therefore I have made a practice of not reporting upon any tree that I have not seen bearing for a considerable number of years. The Russian apples readily group themselves into classes and among the most common of these is the Duchess class of apples. Under that head we would include Borovinka, Green Glass and Sandy Glass and a number of other varieties. For practical purposes they are Duchess. I do not know the difference between Borovinka and Green Glass. I have been told that the Borovinka is a little lighter but I have not been able to make any clear distinction myself although I tried to do so for nine years.

The Lieby, Silken Leaf, Romna and Hiberna are the hardiest varieties we have. The fruit of this class of apples is sour, lacks richness and ripens in mid autumn, and if picked in good season keeps until the middle of January. This class is wonderfully hardy and I have no hesitancy in saying that I believe today it is the safest apple for the farmers of Minnesota to plant. It is a first-class cooking apple. The tree is spreading in habit and the fruit large and of fair appearance.

Another class of apples includes the Breskovka (152), Blushed Calville and Thaler. The Blushed Calville is the best, I think, of these three. The Yellow Transparent would come in this class and its fruit is typical of them all. Breskovka is not so good as the Yellow Transparent, but is later in season and very good to be eaten out of the hand, and the tree does not blight.

The Anis family embraces many very hardy sorts, but the fruit is generally small, though often produced abundantly. Among the varieties in this class are Red Anis, Anissim and Repka Malenka. The Repka Malenka I

think very well indeed of. It is doing well in our state, and I have seen them in good condition as late as May and June. It is an apple of considerable freshness. I recommend planting it for home use. It has desirable eating qualities, but its chief value is as a long keeper. The Anissim is wonderfully hardy, productive and good.

The Charlamoff is a variety that has proven hardier than the Duchess. It has a fine aroma, is highly colored and in every way a desirable apple. One objection is that it does not hold its aroma for a long time. It keeps better than the Duchess, but loses more in quality by keeping.

DISCUSSION.

Mr. Plumb — Style of the tree?

Prof. Green — Very straight.

Mr. Chappel — Is it full at the blossom end? More than the Duchess?

Prof. Green — I would say so. It will not run any larger than the Duchess.

Q. — Is it an apple that will keep until mid-winter.

Prof. Green — Not unless kept in cold storage.

Q. — What about the Ostrakoff.

Prof. Green — Referring to the Ostrakoff, it is a large green winter apple. It is a good keeper, but it blights very badly. The fruit is large and handsome, but I do not recommend it at all. Another one I want to refer to is the Cross No. 14 and the Voromish Reinette which is about the same. It is a fall apple of good quality, but a little too flat in form to have the best shape, but I think well of it. The tree is standing very well indeed. Another apple I think well of is the Bode. It is yellow autumn apple, the tree is hardy, and the fruit somewhat resembles the Yellow Transparent. The Zuzoff is a dark red apple with green spots on

it and keeps well into the winter. But it has not done very well. I am not going to say anything against Russian apples. What I have said to you has been principally in favor of about ten varieties of the most promising kinds we have. My subject was to tell you something of Russian apples and their adaptation to Minnesota. So I have said nothing about seedlings. If anybody would like to ask any questions they might bring this subject up.

Mr. Tuttle — We received two apples from the department, that is one of them which we call Zuzoff is a straight tree and heavy bearer.

Prof. Green — A little inclined to overbear.

Mr. Tuttle — I never saw any trouble with the tree in any respect. It never blighted.

Prof. Green — I think your Zuzoff is the same as our Anissim, which was also sent out under the name of Good Peasant.

Mr. Read — I would like to ask Professor Green a question, does the Yellow Transparent blight?

Prof. Green — Yes, it does.

Mr. Plumb — Why do you not mention the Longfield?

Prof. Green — Because I forgot it. The Longfield is a wonderfully good tree.

Mr. Hartwell — How does it ripen with you?

Prof. Green — This year it ripened pretty well. It keeps until the 1st of January in my cellar.

Mr. Barnes — Is not the Longfield the smallest one of the Russian apples?

Prof. Green — The Repka Malenka will often be as small.

RUSSIAN APPLES IN WISCONSIN.

A. G. Tuttle of Baraboo, Wis.

The following list of new Russian apples I have found valuable after a test of more than 20 years:

Early Champagne, the earliest apple of the list, is two weeks earlier than any American apple. I have had it in good eating condition the 4th of July. In size it is below medium, regular in form, a very fair shipper, good for cooking or eating. Tree perfectly hardy, free from blight, an early and abundant bearer.

Transparent is an early apple of good quality; tree an early and abundant bearer, subject to blight while young. My oldest trees in orchard have not blighted for several years; this tree has been more generally planted east and west than any other Russian and has made for itself a reputation, notwithstanding its tendency to blight, but we have better early apples among the Russians.

The Lowland Raspberry is without doubt the best early apple grown. The tree is perfectly hardy, free from blight and a model in form, both in orchard and nursery; fruit not excelled in quality either among the early or late apples. East or west, this apple should have been brought to the front long ago. The first tree I set was girdled by mice and killed, after bearing one or two crops. I set several trees in orchard four years ago; they bore good crops last season and my ideas of their value, as an early apple for market and home use were materially changed. Several years ago, while the first tree I set was in bearing, Mr. J. C. Stickney came to my house. We went into the orchard. He said, "Show me a good Russian apple." I gave him one of these, which he ate, and said it was better than the Early Joe. I have always thought he overestimated the quality until I fruited it last season.

The German Calville is better in tree and fruit than Transparent; the fruit is large, conical, faintly striped and quality very good. It is a fine market apple. Tree hardy and upright in growth and entirely free from blight.

Closely following these early apples comes the Juicy White, about the quality of the Transparent. Tree perfect and no blight; has borne good crops every year for 20 years, except the season of 1895 when everything was destroyed by frost. Mr. Downing wrote me saying he thought favorably of it.

Next in season comes the Charlamoff, with fruit about the size of the Duchess, but better in quality. It is a good market apple; tree perfectly hardy and no blight. About the same season the Beautiful Arcade, a sweet apple, is ready for use. This is the most valuable sweet apple among the Russians; the tree is a heavy biennial bearer. Fruit is large, striped, and of excellent quality. It is bearing in different localities and is making for itself a reputation as the best sweet apple of its season.

Heidom Streaked and Barloff are sweet apples of value. The latter is in appearance and quality much like Weaver Sweet; the tree blights some, but not enough to prevent its bearing fair crops. There is a class of apples, large and showy, of good quality and fine market apples, better than Alexander, but like that tree are subject to blight. They are the Zolodorff, Turnipy Juicy, Varsales Largest, Green Streaked and Titovka. One of the best of the late fall and early winter apples is the Zusoff, a heavy biennial bearer, a dark red apple always fair. Quality the best. We received from the Department two apples of the same name; one is very large, but both good and are free from blight. The Yellow Lemon is an early winter apple, of good quality and is a better keeper than Wealthy. Tree is upright.

Of the Duchess class are the Glass Green, White Krim, Arabian and Annisette. The trees and fruit are so nearly like the Duchess as not to be distinguishable even by the best judges. There are several fall and early winter apples of value. The Longfield is perhaps the most valuable, as it is the most productive, bearing heavy crops annually. With me it has been hardier than the Duchess. It will stand more abuse than any tree I know of, is a good grower and free from blight. The Hibernial is getting to be pretty well known; the tree is hardier than Duchess. My trees have borne good crops

yearly for 20 years, except the season of 1895, as before stated. It is a good cooking apple. The Antonovka is one of the best of the Russians; fruit large, good for cooking or eating. It is the largest apple of Russia. It grows as far north as latitude sixty. It bears heavy crops every other year. Three years ago I shipped these apples to Duluth. They netted me over one dollar per bushel. This tree, on account of its extreme hardiness and the excellent quality of its fruit, is bound to become here as it is in Europe, the leading apple of the northwest. In the nursery it blights some, but in the orchard the trees are all right.

Repka is the latest keeper among the Russians; tree a heavy bearer every other year. Fruit better in quality than the late keepers among American varieties, such as Willow, Ben Davis and Romanite. Borsdorf, another late keeper, is a small apple with quality about equal to a pear.

The foregoing description is of some apples among the best of the Russians. There are many others of value. One thing we are certain of—we need have no anxiety about their being destroyed by our occasional hard winters. Mr. Philips says: "I am riding the Russian apple hobby, but I am perfectly willing to stake my reputation on the success of the Russian apples. I have one orchard mostly Russians which produced last season about 5,000 bushels, which for health and vigor I am willing to compare with any orchard east or west. The cry against Russian apples comes principally from men engaged in propagating some new seedling which they hope to put upon the market at an exorbitant price." C. G. Patten of Charles City, Iowa, claims to have seedlings of great value. Two of them were planted several years ago on one of the best locations in Sauk county. One of them made a very thrifty growth through the season, but was killed dead before winter. A Pewaukee tree near it was killed in the same manner. I have some seedlings that may prove of value, but I do not expect to live long enough to test their hardiness. In the meantime it is best to look to the Russians that have been tested in a severe climate for hundreds of years. Of the large

amount of seedlings that have originated in this country during a period of more than two hundred years. not one has proved as hardy as the Duchess of Oldenburg. One of the best Russian apples is the Crop apple.

Mr. Chas. Gibb, after his return from Russia, came to my place and looked over my orchard. He said, "You have nearly all the apples I saw in Russia of value, but there is one or two it would be well for you to get." On his return home he sent me cions of the Crop apple and Grand Mother apple. From trees grown from these cions I planted in orchard four years ago several trees. The Crop apple bore last season a good crop. The trees are perfect models of health and vigor, though planted on ground on which carrots had been raised for two years which was manured heavily each year and they showed no blight. The Grand Mother has not borne fruit yet. The Crop apple is about the size of the Duchess, with dark red stripes. Its season is late fall or early winter. There are few American apples that equal this one in quality.

Mr. Dart—I want to make a few remarks. Now, up in Minnesota we look upon the fight of the Russians and Americans with a good deal of interest, but we have not considered ourselves exactly in the fight. We have tried to stand neutral. We have been investigating and trying all the time, we saw the bitter warfare in Iowa. Now this question before you is not a fair question, it is all on one side. You have it all Russians. You talk Russians, but seedlings are out. How will you weigh the matter fairly, so that it will be a fair, free fight?

Mr. Tuttle—I do not want to say anything against the seedlings. The great fight is between the men that want to make a foreigner out of the seedlings. I have seedlings here that I know are going to be a good thing.

Mr. Tuttle—I have watched the winters for 40 years or more. I can tell very well what a winter is going to do before I get through with it, its effect on the orchard. During the extreme cold, high wind, the moisture is drawn from the

tree, and if it stands too long it will not recover. Certain trees stand certain degrees of cold, others will stand more.

Mr. Philips—I think it is the extreme, long continued cold weather. It freezes the moisture all out of the tree.

Prof. Goff—I want to speak of one Russian apple that is better than some spoken of. It is the Lubsk Queen. The fruit is very attractive in appearance and fair in quality. Its beauty makes it sell well. What is the experience of others on it? Why does it not attract more attention? What is the quality of that apple?

Prof. Goff—It is fair, somewhat acid. We have an apple that is similar in appearance, the Red Wine.

You told me that you do not consider your Red Wine as good as the Hatch.

Prof. Goff—Whatever the quality of this apple may be, it is salable and productive.

Prof. Taylor—I would like to know, Mr. President, if I cannot substitute 10 minutes of my talk of this evening and put it in now.

President—We should be pleased to hear from Prof. Taylor.

Prof. Taylor—It is not because I want to hear myself talk, but I have always felt that it is unfortunate that we have statements made of Russian apples which, while true, are not accompanied by certain modifications. Russian apples when put in our hands some 15 or 20 years ago should have been accompanied by statements as to the climatic condition of the section from which they came. To speak of Russian apples here is like speaking of American apples in Russia. Russia extends farther north and pretty well towards the south, and has as many different climatic conditions as the United States. Moscow is pretty near the center of Russia. It is 500 miles or more from the Black Sea. In the extent of 1,000 miles you get a variety of climate and if you bring fruit from that country you ought to know the sections from which they come, and the conditions in their home. My travels in Russia touched the territory from St. Petersburg on the north to Odessa on the south, and from Warsaw on the west to Kazan on the east, so that what I am going to say is prin-

cipally along the line of what I have seen in the territory mentioned. St. Petersburg is beyond the limit of apple growing in Russia. During my first visit to Russia I went to see the largest nursery at St. Petersburg from which came the scions from which were grown some of the first apple trees in this country. I found that so far as hardiness of trees is concerned, they have no apple trees that can stand the conditions about St. Petersburg. The apple trees are grown while young in boxes and are protected very carefully in winter. At Warsaw I visited what I consider to be the best pomological garden I have ever seen. I found the largest collection of apples and pears that I have ever seen grown on experimental grounds. There are thousands of varieties of apples being tested there. Some questioning as to the places from where these varieties have come from brought out these facts. Almost every apple growing district on the face of the earth is represented by some of the best varieties. When I asked the proportion of Russian apples in the collection, the inspector who was showing me about, replied that there were very few indeed of the Russian apples, as they were not considered of sufficient value to claim any large part in their trial grounds. The varieties that are grown in that neighborhood are of local origin. The Russian apples are not of much value to us. We have tried them for many years. From Moscow to the Black Sea, through Tula, Kursk Kief and further east you have what may be called the apple growing district of Russia. Near the Black Sea the rainfall is much less than it is further north. The snow fall is light and they grow few apples. In the Crimea they grow the sort of fruits that are grown in California, including varieties commonly grown in Italy and France. Exact statistics of the rainfall, etc., are hard to obtain, but you find conditions in some sections that are not far different from what we have here. One condition that is more favorable for fruit growing is the matter of snow fall. The snow fall is a protection to the trees during the winter and furnishes water with which the ground is soaked when the growth commences in the spring. The question of nomenclature is one which is in an unsettled condition. If you go into any sec-

tion of Russia, the chances are that they have not heard of many of those we suppose to be well known all over Russia. There are just as many conflicting reports as to the value of any variety as there are here. If we take these facts and they certainly are facts, and after putting them together use them as a factor in drawing our conclusions as to the value of the Russian apples we shall be better able to come to the right conclusion. We may use them in cross fertilizing with our own fruits to produce new sorts, and in this way we get much good from them. Until we start out with the idea in our mind that we are only experimenting and not undertaking a sure thing, we are not moving in the right direction and we will surely meet with disappointment.

Q. Would you recommend planting Russian seeds?

Prof. Taylor—Russian apple seeds produce sorts more nearly like the parent because their propagation has been along this line. In planting Russian seeds you are more apt to get sorts like their parent, than with our own seedling sorts.

Mr. Dart—Do you think the crossing of the two would be beneficial?

Prof. Taylor—Very likely, because some of them are hardier than our own varieties.

Mr. Hartwell—Is it advisable for Russians to come over here for our varieties?

Prof. Taylor—American apples have to some extent been introduced into Russia.

Mr. Hoxie—Do I understand, Prof. Taylor, that practically no apples are raised north of Moscow?

Prof. Taylor—Practically none.

Prof. Green—Are there nurseries there?

Prof. Taylor—There are nurseries in that section, and I must say that cherries that are grown in the latitude of Moscow are of considerable value, and I believe we will get more good in a short time from Russian cherries than from Russian apples. About Moscow there are large orchards of cherries grown. I was there during the cherry season when some were ripe, so I was able to judge of the quality and conditions of the trees and fruit and was pleased with their hardiness. Rus-

sian cherries are short lived. They are of dwarf habit and the trees do not grow as large as do ours.

Prof. Goff—I would like to make one remark about seedlings, that is this: I do not think we ought to distinguish between grafted apples and seedlings as though they were different. They are all seedlings, the grafted sorts have been selected for their hardiness and other good qualities.

President—The next topic on our program is

ANALYSIS OF PRUNING.

By Professor E. S. Goff of the Wisconsin State University.

The subject of pruning has something perplexing to it. I have felt that it has perplexed my students, and I have also been perplexed in giving instructions to people who inquire "How shall I prune my orchard?" I ask, "What do you want to prune for?" They say, "I do not know; it ought to be pruned and I would like to know how." It is as important for a man to know what he is pruning for as it is for a doctor to know what he is giving a prescription for.

If a man amputates he must know what he is amputating for, and if a man saws off the limbs of a tree he must know what he is doing it for. I have therefore formulated a system by which I can make it clear to my students. It may help to clear the subject in your minds.

First, as regards the object of pruning, we must have one of four objects in view. To change the form of the tree. If the tree is too thick, it ought to be made thinner. This class of pruning is called formative pruning. It refers to the form of the tree. That is one object.

Second, is to cause the tree to bear more fruit or more flowers, in other words to stimulate development. This is called stimulative pruning.

Third is protective pruning. What I call protective pruning is pruning against blight, etc.

Fourth, another object for pruning which is less common and is to hasten maturity. This is called maturative pruning. I will now explain them in detail.

FORMATIVE PRUNING.

The object in lawn and shade trees is to make the tree more symmetrical. This is done by pruning all branches back that grow out too far. For trees that are grown for ornaments this kind of pruning is recommended. The natural shape of the tree must be retained and an elm must not be made to look like a maple, or a maple like an elm. Evergreens when young need a little pruning to cut off some of the branches. So much for *outline pruning*.

Another one is to regulate the density of the branches. There are various objects in this. It is important to have the light shine in the center of the tree, and experience has shown that unless this is done the tree will not develop, and in order to do this with fruit trees it is necessary to make the branches thin, and not allow them to get too thick. This is *pruning for openings*.

Sometimes we prune for density. The way to prune for density is to cut off the tips of the branches. This stimulates and thickens. If you cut the evergreen in the spring, there are three or more buds started near the terminus. (Prof. Goff refers to black-board.) Same principle holds good with deciduous ornamentals. They are pruned to make picturesque outlines. This has little practical application to the practical grower. Pruning for stockiness in blackberries raspberries and nursery trees, the way is to pinch the terminal bud. It strengthens the trunk by causing new formation of wood. Sometimes still more rarely, we desire to prune for a slender plant. Cut off the lower branches, encourage terminal shoot.

Then we come to the subject of stimulative pruning. Can you make a tree bear by pruning? We can certainly do something, there is no question. I do not know whether brother Dart has given his girdling paper yet.

I wish to say that there is no one way, there is no one road to fruit production. We can do something by pruning and yet I think that as a rule we need not do much. We can make our trees bear 4 or 5 years earlier. We can pinch the tops of growing shoots in summer. This checks the growth, and the theory is that this stimulates the production of fruit, but on the contrary checking the reproduction tends to increase the growth, another way is to dam off the food current that is moving from the leaves where the food is forming, to the roots. Then we cause an accumulation of food above the obstruction. This is often recommended, but there is no reason to doubt that we are injuring the tree by doing this. This is often practiced on crabs. We can often make a tree bear in this way. I tried it with the apple and pear tree, by girdling the tree.

I think we can do something in this way. If our orchard has been making a vigorous growth, and is not forming fruit buds, we can by cutting back, check the growth. By pinching back the shoots we can cause the tree to form flower buds.

As to pruning for growth: One way is to cut the tree back. The philosophy is we reduce the number of buds, and increase the sap for the buds that are left. The buds will then make an extra good growth. This is almost all I have to say on this subject.

PROTECTIVE PRUNING.

If a branch is dying, it is better to cut it off. In pruning for blight, we must cut the branches down a little further than the blight has already reached. Unless we cut down deep enough to remove all of this diseased tissue we do not remove the disease. Cut off the blighted limb, and it stops the blighting on that limb. The removal of the dead limbs needs no special advice.

In regard to maturative pruning.

Sometimes we take off the leaves to favor the wood. I know it has been recommended.

Mr. Chappel—I want to ask when a young tree has a tendency to have too heavy a growth of leaves, and has but few limbs. Does this not work too heavy on the limbs, and cause blight?

Prof. Goff—That is true.

Q. Is there any spore on the limbs if they drop to the ground?

Prof. Goff—Yes, there is.

Mr. Plumb—You speak of summer pruning, what is the effect upon the roots of the trees?

Prof. Goff—I would suppose that it would cause a check in root growth. When would you prune an apple tree?

Prof. Goff—Do it early of course, just as the leaves are opening.

Mr. Tuttle—I find that it depends upon the hardiness of the tree, as to how it stands the pruning. I have some trees that bore heavy crops every year, and at the time the sap was in circulation, cut the limbs off, about 6 inches from the body.

Mr. Kellogg—I am often asked at the conventions when is the best time to prune, and I say, "When you can rub the bud off with your thumb."

WHAT ARE WE DOING TO PRESERVE OUR WISCONSIN FORESTS?

By B. S. Hoxie.

From my earliest recollection the woods have always had a charm for me, and a thick spreading top yellow birch tree whose withe-like branches I always passed under when in search of the cows in the back pasture, often afforded shelter from a passing shower, was always an object of deep admiration. And every tree to me possessed a form of beauty and object of veneration. And that poem of Mr. Morris',

Woodman spare that tree,
 Touch not a single bough;
 In youth it sheltered me,
 And I'll protect it now.

possessed more than poetry, for I could see it almost as a human form, an animate form; and so trees, forest and woodland, always claim my earnest thought, and the wanton waste and destruction of the forest growth without proper regard for the perpetuity of some portion of it, is worthy the consideration of the philanthropist and statesman. To the man who only looks at a tree, for the worth of the firewood in trunk and top, or the number of feet of lumber, board measure, which it will cut under the saw, this is all sentiment. And so it may seem, but then it may crystallize into a sentiment productive of financial gain; for to be a true patriot, one must have some thought for the future of his country, as well as to its present gain. It is an old but trite saying that we lock the barn after the horse is stolen; and in the matter of forest preservation this has a good application, for in most all of our heaviest timbered states where lumbering has been carried on with an indiscriminate, lavish hand, the people now see the necessity of wood and timber for domestic purposes. And in some of these states very efficient laws have lately been enacted having for their object the preservation, and so far as possible, the reforestation of the timber areas. Pennsylvania of the eastern middle states was once the heaviest timbered of any, but is now nearly denuded its original forests, and all land owned by the state or the general government, has passed out of its hands, so that now no state "reserve" can be had except by purchase from private individuals or charcoal companies. This state, three years ago, appointed a Forestry Commission by act of the legislature, to examine into the forest condition of the entire state, and the result of the work of that commission has just been published with maps, plates, drawings and important data to the agriculturist as well as the lumberman. Much of this belongs exclusively to Pennsylvania, yet the entire report is of great value to our state or any part of our

national domain now included in forest area. I will give one extract from the concluding chapter of that report which, if it does not already find a counterpart in Wisconsin, it soon will. He says: "In some places, mainly on the untillable mountain areas, a second growth of valuable kinds of timber has attained to considerable size and would in time reforest the land. Even this growth the greed of the timber hunter has attacked, and instead of being allowed to grow to greater worth, it is being wastefully swept away for railroad ties, fence posts, box boards and other uses to which small timber may be put. Our mountain streams which, when the forests were standing, had through all the year a nearly uniform flow, now dwindle in the dry season to mere rivulets or cease to flow altogether. Springs that were permanent throughout the year and bountiful in supply, are so reduced in volume as no longer to be a dependence, or are wholly gone. In the season of heavy rains the waters are thrown so quickly to the courses that small streams become raging and destructive torrents, and when aggregated in the larger water courses, the waters move with such impetuous force as to sweep the valleys, carrying away not only buildings, but whole farms, and robbing many of the accumulations of a life time. Until such measures are taken as will result eventually in reforesting our waste lands, we will see a continuance of such, or even worse conditions, and our legislatures and the people generally cannot awaken too soon to a realization of the imperative need of measures looking, not only to the conservation of the forests still remaining, but to the restoration of forest growths on lands denuded of such growth not reasonably suitable for or needful for agricultural purposes." The country that produces the best timber also produces the best men. Savages may live in the forests by hunting and fishing, but civilization demands the field where agriculture takes the place of hunting, so no one would make a plea for anything like the primeval forests in our own state or in any part of our country; but there are thousands of acres of timber land in Wisconsin which is only fit for timber and should

remain in perpetual forest, and all such lands now owned by the state, I maintain, should never be sold but held as a perpetual reserve. The ripe timber or that now fit for commercial purposes can be sold under the direction of the land commissioners or a forest warden. This should be no untried scheme, for happily we have the example of the state of New York, and I will give a quotation from their late report:

"Reference has been made here to the revenues obtainable from the preserves (referring to the Adirondac preserve), and their availability for the payment of interest on the bonds. We should state right here that the possibility of obtaining large revenues from the state forests without injury to the same, is no longer a theory but a fixed fact. This has been demonstrated by the offers made to this department to purchase spruce trees twelve inches and upwards, on lands which have been cut over twenty to twenty-five years ago. One-third of the Adirondac wilderness is a lumbered forest in which lumbering operations have been carried on in the past but which today retains uninjured and unimpaired, all the functions as a protective forest and shows no diminution in the quantity of its timber or its foliage. It will readily appear if the state should acquire the virgin forest also there would be not only an increased area of productive lands but an increased revenue per acre. It is strictly an investment, one convertible into cash at any time, for the lands can always be sold for what they cost."

This was a sort of plea for the state to acquire these land as it had an opportunity, and since have purchased it, except a portion of the forest owned by the Adirondac League club, which derives large returns from the investment, besides their use for the game and fish, though costing them thousands of dollars. I make this plea for our forests before it is too late, while now we have considerable land unsold and not very valuable. I make it also, to if possible, the more firmly fix in the minds of our people the importance of ever keeping as a state preserve, the tract of land in Oneida county which was set apart a number of years ago by legislative enactment as a state park, but which attempt has been made

to throw it on the market, and maybe again when some new member of the legislature, more thoughtful for present gain than for the future good of our state, stands up in his seat with "Mr. Speaker" and offers another bill to repeal all laws relating to our park preserve. I make a plea for the forest because there is an annual money value in it, leaving out all other considerations of the value of the forest, for want of time in this paper. The agricultural products of our country are about two and one-half billions annually, and the products of our forests equal the same, not including the manufactured articles from its products. The proportionate amount of this for our state during the last decade has been on the forestry side as against agriculture. For agriculture we are expending some \$12,000 annually to inform the farmers of better methods, with traveling schools in every county; we are also expending about the same amount to stock and restock our lakes and streams with fish, mainly for the benefit of the few, but for the lack of wise legislation our forests are being devastated by wanton destruction of ax and fire; I find no fault with this, it is as it should be. I only wish to call the attention of our people to that other agricultural crop always sure and never failing in its annual returns, provided we give it a chance—the timber of Wisconsin. In this connection I wish also to make pleas for the horticulturist's best friend—our brothers of the air. These too are disappearing by trap and gun, while myriads of insects destroy our fruits and fields. Can we save our birds as well as our forests? Hunters and fishermen from the large towns and cities visit the northern part of our state every year as sportsmen, and it is safe to say they leave in the hands of guides and hotel keepers a sum equal to \$20,000 annually, but what will this be when every man is a trespasser on private property? But to the direct question, What are we doing in Wisconsin to save our forests? I make answer that two years ago we did make enactment of a law with this title, Chapter 266: "An act to provide for the better protection of life and property against forest fires."

This law had some good features and many weak points. It made provision for a chief fire warden, which was to be the clerk in the land office, and his assistant clerk should be the deputy forest warden, "neither of whom shall receive any additional compensation for the duties performed under the provisions of this act." I quote from the law. This law goes on to specify the duties of the warden and his deputy in carrying out the several provisions in the act, and in section 8 it says, "there is hereby appropriated out of the general fund of the state, a sum not to exceed three hundred dollars annually, to carry out the provisions of this act."

How much work can we expect of a man without pay? This amount specified would hardly pay for paper, stock and cloth to print legal forms and notices on, and besides Uncle Sam must have something for postage. I am glad to say, however, that the chief clerk in the land office and his assistant have made a good beginning, and I cannot think they have done it all without eking out a moiety somewhere else to supply the miserable pittance of three hundred dollars.

Nearly three thousand notices printed on cloth as required by the act, were posted in parts of the state most frequented by hunters, or where it was thought they would "do the most good." Six hundred and ninety-two fires were extinguished during the year, at a cost to the several towns of fifteen hundred and nineteen dollars. Notwithstanding, there has been great loss of property in our state by forest fires during the past year, who can estimate the still greater loss if these 692 fires had not been extinguished by the prompt action of the fire wardens in the towns where they originated, with those they called to their aid as assistants?

I would have this law amended and made more efficient. Instead of leaving it with the land office as it now is, I would have the governor appoint a forest commissioner and chief fire warden with a salary sufficient to secure a man qualified for the duties. He shall call to his aid two assistants, which together shall form a forestry commission, which shall investigate and report a system of forest preservation to our next legislature. Provided the entire expenses of such exam-

ination with full and complete report shall not exceed \$5,000. I would have all our public lands withdrawn from market until such commission had made their report.

As the law in our state is similar to that of Minnesota and existing conditions about the same, I give from their report just published, the opinions of some in that state to whom questions were sent on printed blanks. I think our fire warden has sent out similar questions, but the replies are not available. "Land owners take interest in forest preservation; others seem to be careless." Thomas Lamb Eli, St. Louis Co.—"Our forests could, by proper management, furnish all the fuel and timber required without disposing of the land, and still bring in more revenue than under the present system." John Keidel, Stevens Co.—"I think the law was made twenty years too late, as the best forests have been ruined." John Theisen.—"People are just beginning to realize that the destruction of our forests will eventually prove detrimental to the country. The craze to clear land has caused many of our farmers to dispose of their timber and now they are regretting it." Another man writes: "Among thinking people it is generally considered as a step in the right direction. I would suggest that the chairman of each town be authorized to call a public meeting on some day in the month set apart by the legislature, for the purpose of discussing the most effective means to prevent forest fires."

These are only a few of the replies, but they show something of public opinion on the question of saving the forests.

I have made no attempt in this paper to show the effects of forests on climatology, or other influences connected with the subject of forestry, for I have already exceeded the time allotted me, but however briefly I have considered the points presented, I trust they may arrest public thought, for thought crystallized into action is the only power which shows in results needful for any law or any enterprise to the benefit of mankind.

DISCUSSION.

Mr. Hirschinger—There was in this paper a little criticism as to the amount appropriated to defray the expenses of this act, which was three hundred dollars. That bill was one which came from the Forestry Horticultural Committee and was passed in the other house, and as it passed the other house it passed it "There is hereby appropriated a sum sufficient to defray the expenses of this act." It came into the senate, and I was told that a gentleman from Evansville went to the Assistant Clerk in the land office, and they came up here and got an amendment to make it three hundred dollars, which they thought was better than the bill as it was.

Mr. Hoxie—I didn't catch the cause for that amount—three hundred dollars. I think you said some one made that request. Was that it?

Mr. Hirschinger—I was so informed, yes sir. They appeared before this committee.

Mr. Hoxie—From what place was the gentleman?

Mr. Hirschinger—From Evansville; and the Assistant Clerk of the land office told me.

Mr. Hoxie—I think that was a mistake for I do not believe there was anyone in Evansville who had any more thought about this matter than I had. I am quite sure it was a mistake. I do not think anyone there would wish to undermine such work. I didn't wish to offer this as a special criticism. Perhaps it was the best we could do. It was the best we did do at any rate, and I was very much pleased when I went into the land office a month ago to see what progress had been made with the small amount at their hands—handicapped as they were.

Prof. Green—I would like to ask a question. I have been studying this question of the increase of timber on the pine lands of Minnesota, and am preparing a bulletin upon it. A special appropriation has been made recently and a special agent put to work on it. We find on looking it up that in some counties there is an immense amount of land

forfeited to the state for taxes. If I remember correctly there are nearly a million and a half acres unredeemed. Now we have thought a good deal over the subject, as to whether the state could not take charge of that land—if that tax title could not be made good and the state take charge of it and operate it. As it stands at present in our state, and I presume it is so in your state, that land is entirely defective. Nobody cares anything about it. There is very little growth on it. Somebody may pick it up for the taxes and cut it, and then let it go again. It seems to me if there was some way of getting around that, it is a very important thing to discuss. I presume there are large areas of land in Wisconsin forfeited to the state in the same way as in Minnesota.

Mr. Hoxie—Thousands and thousands of acres of land in this state are in just about that condition. If care was taken of the land it would soon re-forest itself and be valuable to the state as in the state of New York.

Prof. Green—I would like to ask, Mr. Hoxie, whether you have any way in this state of getting possession of that land in the name of the state.

Mr. Hoxie—We have no way yet that I know of. I have been told by those better posted that a great many of those lumbermen who have gone over the land and cut off the best timber will dispose of the land at a nominal price now.

Prof. Green—What I refer to is a large amount of this land where the timber has been cut off, that has been reverted to the state for taxes. Nobody has bid it in. Now is the state's title good for anything?

Mr. Hoxie—I could not tell much about that, but I know there are considerable portions of land that have gone back in that way.

Mr. Toole—It would seem to me that the most direct way to get at that would be to see that the proper legislation was enacted, with a view to the state ownership of it, and looking to the state holding it for the good of posterity.

Mr. Hirschinger—I know of no way of getting at that only

to do as other states have, appoint a commission to look after these lands. In a conversation I had with the Governor yesterday he told me that the judge approved of the lands, and the people who wanted to get the timber would rather pay so much for the timber and take it off and leave the lands. Then of course it is in the hands of the state. But unless we can do something those lands will be subject to fires more every year, and in greater danger of having all the timber on them destroyed.

Prof. Green—I would like to ask Mr. Hoxie what has been the effect of the fire law passed in this state two years ago. What is the opinion of it held by the people who live in the woods?

Mr. Hoxie—The only means I have of knowing is by looking over the replies to questions sent out, similar to those in your state. I did this about a month ago, and find that the replies average about as they do in your state. The majority are in favor of the law and some day it will be more rigidly enforced. The railway companies in our state have been very careful. They have been most observant of the law—more so than individuals.

Mr. Kellogg—I am surprised that so much has been done with the small outlay, and I am rejoiced to know that so many fires have been extinguished. The trouble has been in all this northern country, not only in the cranberry marshes, but in the forests, to repress those fires; and the more stringent the law and the better enforced, the sooner we will get the reserves; and I am heartily in favor of the state purchasing all such land as has been vacated, and perfecting the tax titles until the reserve is secured.

Mr. Hirschinger—I want to say that the law as it now is was entirely satisfactory to the cranberry growers, and the president of the Cranberry Association was with us on several days. It has been accepted generally, with but one objection to the law, and that is an amendment to the effect that trappers and fishers are allowed to build fires, while the farmers are not. That wants amending this year.

Mr. Toole—Hunters and tramps have more privileges than the balance of us.

Mr. Tuttle—I wish to say that this practice of taking up those lands is going on right along. A man can buy forty acres of land for twenty dollars and he can go forward and cut off that pine and leave the tops on the ground, and get perhaps fifty thousand feet of pine off of the forty, and let it go back to the county with the tops of the pines ready to burn.

Mr. Toole—I would like to say just a word on another question. We have suffered a great deal in Sauk county from these fires. New timber has grown up, and time and again it has been destroyed by fires, and of course we suffered very much in the fall of 1895. But what increased the danger with us was the amount of brush left in cutting over, and I suppose that answers to the danger in the pine country as well. It seems to me that the brush should be required to be burned from these clearings. Now, speaking of my own experience, it is customary with us to buy standing timber, then cut it, and for my own convenience I have burned the brush this winter, so it was more easy to get around and get my wood out, and I do not believe it would be imposing too much on people if the law required wherever any clearings were made that the brush should be burned up within a reasonable time.

Mr. Tuttle—I saw a notice in the paper the other day that a colony from Prussia had bought four thousand acres of land up in Jackson county, just above our cranberry marsh. They are going over there to settle, three hundred families of them, and will I suppose buy those pine lands that have been cut over. Here is a large extent of pine country that has been cut over, and the tops of the pines are lying there. You might as well try to stop a whirl wind as to try to stop a forest fire full of tops of pines.

RUSSIAN HORTICULTURE AS SEEN IN RUSSIA—
SUGAR BEETS.

By Professor F. W. Taylor of Nebraska.

Mr. Chairman, Ladies and Gentlemen—I am very glad to be able to appear here, and I think before I start to speak of the two subjects upon which I am going to say something, that I ought to explain to you how it happens that I have such a part on the program, so that you will understand the conditions. I came up here with the subject previously announced as you find it on the program, “Observation of Russian Fruits in Russia.” A part of that talk I gave, by the courtesy of the chair, this afternoon, when the Russian apples were being discussed, and a number of requests having been made to that effect the chairman asked me if I would say something about sugar beets, so that I shall say very little on the topic assigned on the program, and take it for granted that no discussion upon that topic is to follow, and shall speak very briefly and then pass on to the question of sugar beets.

The Russian apples have been the cause of contention and of trouble in this country as well as of study for twenty or thirty years, and what I say about them is based on observations I made there during a part of two summers, as well as upon a study of the fruits and trees as I have seen them in our country. My state is Nebraska, so that what I say is more particularly applicable there and incidentally to whatever other territory has about the same conditions. The apple question has been a serious one by reason of the fact that in many parts of our country we are not able to find varieties hardy enough, that is, that will withstand certain conditions. The word “hardy” is often used in the sense of ability to withstand cold, and with a sort of understanding that if the tree withstands extreme cold it is all right; that, if the tree is grown somewhere and taken many hundred miles south of that locality in which it is grown, it will be undoubtedly a great success. I think that some of

the trials and tribulations which we have met with in the growth of apples in Russia has been due to the fact that we have not given due weight to the other fact that apples or any other fruit trees or trees of any kind—taken from a certain latitude south of that point, may just as likely prove tender, that is, unable to withstand the conditions, as if taken north and that it may be just as likely that varieties that stand here, for instance, if taken five hundred miles south of here, will be as tender as if taken five hundred miles north. I do not think I need to speak at length about that; it is in a sense true, but I think that the investigations which have been made prove that we can take it as a fact that apples, or any other fruits which grow in a given locality, are not necessarily hardy all the way south of that locality. I think a part of the cause of the trouble we have had with the blight with the Russian apples here is perhaps due to the change of locality to the south where there are certain trying conditions which they do not have in their country.

My observation of the apples in Russia has been extended over territory from the Baltic Sea on the north to the Black Sea on the south, and from Warsaw on the west nearly to the Ural Mountains on the east.

In Central Russia they grow some apples, and in South Central Russia a good many, but I find that they are on the quest, the same as we are here, for first class, long keeping winter apples. We have, with them, very much yet to desire on that point. They feel that they will never be satisfied until they have something much better than they have now, and so as we bring their fruits here as we have done, we should take them,—as I have frequently said in speaking to those interested in the subject,—simply as experiments, just as we take any other fruit. Our own apples are the result of a long system of selection of those which have been believed to be the fittest, the hardiest, the best, for every one of our varieties is, of course, a seedling; so that our own apples are merely the result of a long series of selections in our own country as the Russian apples are

the result of a long series of selection in that country, under entirely different conditions. In the introduction of their trees we have no more right to insist that they are sure to entirely meet our needs than to make the same claim when our own fruit is taken there.

I think I shall leave that subject with this little touch, because there was so much discussion along these lines which so many of you heard, that it will be better to drop that and speak along the other line.

THE SUGAR BEET.

The subject, then, that I shall now speak from is the sugar beet and the sugar industry. The sugar beet as a producer of sugar, and as grown for the production of sugar which shall compete in the open market and in all markets with cane sugar, is of very recent introduction. I had this particularly illustrated to me last year as I fell in with a gentleman whom I have known for a good many years, who was the manager of the first beet sugar factory in the United States, located at Chatsworth, Ill. In speaking with him there was one particular question that I wanted to ask that he was able to answer, and that I now wish to call your attention to. In the first place I should say that as the contracts are at present drawn between the sugar manufacturers and growers of beets, no beets are to be delivered to the factory unless they contain at least 12 per cent. of sugar. I enquired of this gentleman what was the percentage of sugar in the beets grown thirty or forty years ago, and he told me they felt very well satisfied if they got beets with a sugar content of five per cent. At the time that attention was first called to the various beets,—for the sugar beet is merely a variety which has been grown and propagated with special reference to the production of sugar,—only four or five per cent of sugar was found in the beets then grown. The present condition of the beet which produces such a large per cent of the sugar of the world is the result simply of very careful selection. The

amount of sugar manufactured from the beet and sold in the markets of the world is entirely underestimated by the great majority of people. I am able to add what I believe to be good authority, that forty per cent of the sugar which comes into the United States to day is beet sugar, and that would mean that about half of the granulated sugar that we use on our tables is beet sugar. Hardly a day goes by that someone does not say to me "What is beet sugar like? Is it any where near as sweet as cane sugar?" I do not know how any one is to tell the difference between beet and cane sugar; chemists can not do it, nor can anyone else. I may say right here that I am not a scientific beet man; I am not engaged in the production of sugar from beets, and my interest in it has simply been that in our state there are a couple of factories, and that the work is near enough along the line of that which I have been doing to make it necessary for me to inform myself along certain lines. I do not pretend to be a practical sugar man, and I speak only as one who has observed it and has had close relations with those who are growing.

It seems to me that we ought to know something about the industry in Europe, for there is where it has been brought to its greatest perfection. In Europe the great beet sugar producing countries are Germany Russia, France and Austria. Germany has particularly fostered the beet sugar industry and has paid a very liberal bounty upon sugar produced and especially upon that exported, so that Germany produces much more sugar than any other country. The industry has spread within the last ten or fifteen years into Holland and Hungary, into Eastern Austria, into Central Russia, and into many other districts. In Russia last summer, as I visited some of the farms about Kieff, one of the great cities, I had reason to inquire into what was being done there in the way of growing beets for the factories,—my conversation being with those who raised the beets and sold them. Those are the men whom we can depend upon for accurate information and for the expression of the feeling which there is in the mind of those who pro-

duce the beets. In this country there has sometimes arisen trouble between the growers of beets and the factories by reason of misunderstandings, so that I considered myself favored when I was able to meet some of those who had been growing beets. There the price paid for beets by the manufacturers is \$3.75 per ton for the beets that contain at least 12 per cent of sugar. Talking with a man who had grown a good many acres of them I said to him, "How do you succeed with them? How profitable has it been?" He said "You people over there in America are growing so much grain that we cannot get anything for our product here in Europe; I think that we land owners would be starved to death if we had not had the money gained from the sugar beets." I inquired how this particular price of \$3.75 paid in growing beets upon land which is worth probably on an average somewhat less than land in Southern Wisconsin, and he repeated very strongly, that it was the most paying crop they were able to grow. Their labor, while it is much cheaper than ours in a way, is not so much cheaper after all. Go into beet fields there; and you see great numbers of women and children doing the weeding, thinning, cultivating, hoeing and work of that kind. A large portion of such work in this country is done by horse power, and I am not sure from what I saw there and from what I have seen of the manner of cultivation in this country,—that they are able to produce them so much more cheaply, as we give them credit for doing.

But I presume you are more interested to know just what the result has been in the United States. The first beet sugar factory in all this great central country was built at Grand Island, Nebraska. The first one after the one which failed down at Chatsworth, Illinois, is the one that has been in successful operation at Grand Island, Nebraska, for about eight years. The chemist at that factory is a young man whom I have known for a good while, and a few days ago, when he was in my office, I was conversing with him as to some of the facts and figures bearing upon what they have done there this year, he gave me a number of items to which

I shall now call your attention. I might say that to build a factory such as is located at Grand Island, costs about \$300,000; at the time the factory was built it cost a little more than that. There is a second factory owned by the same firm at Norfolk. Both of these factories have been running this year up toward their full capacity, the one at Norfolk having more beets to work and having a longer "campaign," as they call the working season, than the one at Grand Island. The figures to which I wish to call your attention are these: I said that the price paid for the beets contemplated that they should contain at least 12 per cent of sugar. The average sugar content of the beets at Grand Island was 13 and 6-10 per cent. There were no beets thrown out this year because of coming below the required standard of 12 per cent; many of them came up to 15 per cent, and higher, and in some special cases beets showed more than 20 per cent of sugar.

The number of beets grown about this factory this year was 30,000 tons. From the 30,000 tons there were made 5,000,000 pounds of sugar. There is something interesting to me in speaking of this immense amount of sugar, and figuring the probable amount taken to supply a state like our own, Nebraska. We have a population of something less than a million, but, figuring it in round numbers as a million and allowing that each person consumes 50 pounds of sugar during the year, we should have to have five times as many factories in the state of Nebraska as we have now, each of them turning out five million pounds, in order to supply the state. In other words, we supply 20 per cent. of the sugar used in our own state. If you multiply that by the number of states, taking into consideration their proportionate population, you will find that the figures are something stupendous, that the amount of money paid for sugar is an immense item, and that anything which tends towards keeping that money at home is going to revolutionize in a large degree the business of the country along that line.

Now as to some of the facts about the average product: The price under which these beets were contracted was

\$5.00 per ton, that is, provided the state makes good a law which was passed two years ago giving one cent per pound bounty for the sugar produced in the state. This law was declared unconstitutional, so that when the present contracts were made with the growers, it was that they should pay \$4.00 per ton, with the other dollar whenever the state makes good the one cent per pound bounty which it promised to pay.

The average beet production per acre was about thirteen tons. There is another thing of this that cuts a very large figure in this county in which this factory is located, Hall county. The average number of men employed in this factory during the campaign was 300, and the average price paid was \$2.00 per day; and the length of the campaign was about a hundred days in 1896. The factories run from 100 to 120 days, beginning as soon as the beets are ripe enough to pull, and continuing until after the holidays. During the past season this factory was kept open day and night and Sunday, from the time the first beet was put in until after the last one was run through, at an average cost to the company of \$600 per day. A large part of this labor is not skilled labor; but is labor which almost any intelligent man could do. There must always be a certain number of skilled mechanics and skilled sugar makers, but the great proportion of the labor hired is of a grade which makes it possible for people near the factory to earn this money and keep it at home.

At the other factory in Nebraska, Norfolk, the output this year will be probably 20 per cent greater than that at the Grand Island factory. It will probably be six million, and possibly seven million pounds, so that in the state this year we have produced something upwards of ten million pounds of sugar.

There are some questions which always come up that you are no doubt interested in. One of them is the question of the attitude of the people toward the factories, that is, the growers towards those who buy their beets. In our state there has never been but one year in which there has been

what would be considered trouble between the growers and the manufacturers; that was in 1895. During that year we had a very hot, dry summer and toward the time of the completion of the growth of the beets there came some very heavy rains which started the growth and kept it up later than it ought to have gone on, and consequently the sugar content of the beets was lower than it should have been. That thing had never happened before. The chemist of the factory began to throw out beets as being below the required 12 per cent, the growers protested and finally there was a commission appointed which decided to ask the chemist of the State University to go up there, and investigate. By agreement he went into the laboratory of the sugar factory accompanied by some of those representing the growers of the beets, and after going through the question exhaustively it finally was amicably settled by a decision that the factory had in the main been right in its analysis, and no serious trouble ensued. That this was true is evidenced by the fact that the company was able this year to contract for about all the beets that it wanted, while heretofore it has been impossible to get contracts for a sufficient number of beets to keep the company going the required length of time. An officer of the company told me they had been offered already twice as many beets as they cared to contract for during the coming year, so we feel in Nebraska that the question of beet sugar growing is quite beyond the experimental stage, and has reached a place where it has taken a position that it will hold as a business proposition that beets can be grown successfully, financially as well as otherwise.

Now as to the bounty and the relation of the bounty question to the growth of sugar beets: A law passed in Nebraska four years ago to pay a bounty of one cent per pound upon all sugar produced within the state, of a given grade. I should say, by the way, that all of the beet sugar turned out is first class granulated sugar, no other grade is made. Every pound that comes out comes out granulated sugar. The beets are shoveled in at one end and fall into

the sack at the other end as granulated sugar. The law under which the bounty was made payable was declared by the supreme court of the state unconstitutional.

Today there is practically no bounty law in Nebraska, but I suppose that the legislature will want to be honest and do what their predecessors agreed to do, and will make some provision by which this bounty, which was voted four years ago, will be paid during the period it was promised, which was five years, to those factories which have not received the benefit of the bounty, but are entitled to it. This law, as you will notice, contemplates the payment to the factory of one cent per pound for every pound produced of a given grade; but there is a further provision that it shall only be paid in case the factories have paid at least \$5.00 a ton for the beets. I think the general feeling is that the price of \$5.00 a ton is high, and that it would be better if the bounty were made so that a part of it at least would go directly to the growers of the beets. There is a feeling that it goes into the cash-box of the manufacturers. I do not think that sufficient weight is given to the fact that he only receives the bounty if he pays a given amount for the beets. The feeling generally is that he gets the best of it although it is plainly true that the bounty gets into the hands of the growers eventually. I think that a bounty law should provide that either all or a part of the bounty should be paid directly to the growers of the beets, and I think the factories themselves would be perfectly willing to accept such a condition.

There are in Nebraska now, then, only two conditions necessary to establish beet sugar factories. These conditions are, first, we must find men who have capital who are willing to interest themselves in the manufacture of sugar from beets; the second condition is that there must be, within a radius of a few miles of the factories, men who will grow beets at the agreed prices. These two conditions have been brought together in a manner that has usually been fairly satisfactory, I think, and has put this in-

dustry upon such a basis that I do not think there is any doubt that it will be a very short time only until we will be producing at least all the sugar which we need in our own state.

I presume you will think of some points that have escaped my mind, as I have been running over this matter hastily, and an opportunity will now be given for any one to ask questions.

DISCUSSION.

Q. What use is made of the refuse, if any?

Prof. Taylor—In European countries it is considered a very valuable feed for cattle, and some other stock, but in this country only a very small portion of it is used, and a man can get all he wants by paying a little more than transportation.

Q. What is the nature of the soil required?

Prof. Taylor—The soil required is one that is not very heavy. In our state it is usually a sandy loam. The soil there is mostly black, and in most sections there is a rather porous subsoil which will let the water down readily. Some admixture of sand makes the best condition.

Q. Have successful attempts been made towards growing seeds in America?

Prof. Taylor—There has been very little done in growing sugar beet seeds in the United States. Nearly all, if not all, that come to this country come from either France or Germany, in which countries the breeding up of seeds has been a specialty with a few firms and has been brought to a wonderful state of perfection. It is not likely that in a number of years we shall be able to reach the state of perfection they now have. The way they do it is something like this. They plant the seeds from their best beet. Every beet which promises to be a good mother beet is separated from the others. A little piece is cut out of the side and an

analysis is made. Unless the beet shows a very rich content it is thrown into the common pile. If it shows a very high sugar content, it is saved and allowed to produce seeds.

Q. Is not this one of the first things, in your opinion, that we ought to be studying in this great contemplated industry?

Prof. Taylor—No sir, I do not think so, because we can buy the seeds very cheaply, and if we know that we can grow the beets, I do not think it would be well to wait until we can grow the seeds. I know an experimental station which plans to put in considerable work soon in the way of raising seeds. The money of the experimental station is given for such purposes, and they should carry it so long as it is in the experimental stage.

Prof. McKerrow—I want to get a little information about this bounty business in Nebraska. I understand you to say that the contracts were made with the farmers for \$5 a ton, provided that one per cent bounty was paid; if not, they were to receive \$4 a ton. Now I would like to ask how many pounds of sugar is derived by the manufacturer from a ton of beets.

Prof. Taylor—I cannot answer exactly, but in the neighborhood of two hundred pounds. The 12 per cent sugar content would show two hundred and forty pounds of sugar to the ton, but they are not able to save all the sugar.

Prof. McKerrow—Well, in case one hundred and sixty pounds were secured from a ton of beets, the cent a pound bounty would amount to \$1.60 a ton. The difference of only \$1 a ton in the price would not be enough.

Prof. Taylor—That is on the basis that the factory expects to get half, the other half to go to the grower.

Q. Do they have to keep up the factory the year round?

Prof. Taylor—No, they start up and continue for one hundred days. They keep a few men the year round.

Q. As to the price; do you think \$5 is too high?

Prof. Taylor—There are experts who are kept at work through the year who are responsible for seeing that the crops are properly taken care of; see to the preparation of

the soil for planting, etc. Then there are those who are employed in the factory, such as the officers, and heads of departments.

Q. As to the price; do you think \$5 is too high?

Prof. Taylor—The fact is that in other countries they get heavier bounties than our country will ever be likely to pay, and they grow their beets upon very high priced land, usually where they have to expend a great deal for fertilizers. In Russia there is no bounty paid for the sugar which is produced for home consumption. On the other hand they pay a tax of one cent a pound to the government. In Germany a bounty is paid for that which is produced, and that which is exported receives a much higher bounty.

Q. Do you mean to say that the factory in Nebraska was the first one in the United States?

Prof. Taylor—No; it was the first one in this central part of the United States. There are three factories in California now and one in New Mexico.

Mr. Holmes—I want to ask one question. I understand the factory at Menominee Falls has been delayed and they have \$50,000.00 or \$60,000.00 worth of beets in pits. What I desire to get at is this: If those beets should keep all right up to almost March, won't that be a blessing in disguise to us up here in Wisconsin. If they pass through 20 or 30 degrees below zero and come out all right? Won't it be a blessing if we can pit and keep them all winter?

Prof. Taylor—Yes, of course it would if that should prove to be the case. If the beets should not be accepted or paid for before, however, it would cause a great deal of dissatisfaction. If this could be done it would certainly be a very telling thing in favor of the industry, because it would stretch out the season during which the beets may be worked.

Mr. Toole—How about nitrates in the soil? It was claimed that the most they have to contend with in growing beets is the presence of nitrate in the soil.

Prof. Taylor—That whole question resolves itself simply into one of experimentation. In our state probably every

county in the state has grown a considerable amount of beets, statements have been filled out showing the condition in which they have been grown, and it is known pretty well about what you can expect from every locality in the state and on every soil. It will be simply a question of experimentation in the various counties of Wisconsin.

That question does not give us any trouble in Nebraska. We could support three or four factories in every part of the state and hardly miss the land in use.

Prof. McKerrow—I have a statement of the cost of raising an acre of beets. Many of the farmers' institutes in making their local arrangements write in and ask for sugar beet discussions from the farmers around, and I have been looking into the matter in my own county. A young man, James Watson, grew two or three acres of beets and kept his figures. He plowed a piece of sod-land, which was not an ideal beet ground by any means. His plowing cost him \$1.50 an acre; preparing the ground \$1.00 an acre. Seed cost him \$1.56; sowing \$1.00; cultivating \$2.00; hoeing and thinning \$5.00 per acre. This hoeing and thinning was done by Polish women, brought to the farm by a stone car. Conveying these laborers back and forth over the stone car he charges up \$1.50 an acre; harvesting \$9.00; hauling eight miles at \$1.00 a ton—but he had good gravel roads—making a total of \$33.81 per acre, without any charges for rent of land.

Now this is one of the smallest crops, one of the lightest grown in that section this year. I know of two men who grew twenty tons to the acre. The beets were drilled thirty inches apart which we thought was too much. I induced them to send samples to the Experiment Station, and the analysis shows that these beets contain 16.88 per cent. sugar. They were found to contain 20.62 per cent total solids, which would give a purity coefficient of 81.9 per cent., making them not only rich, but wonderfully good in their purity coefficient, which cuts a very large figure in manufacture. At this rate under the contract which he signed, he will get \$4.50 a ton, or a total of \$50.62 for this acre of

beets, which gives him without charge for rent of land, \$33.81, or which will leave him figuring in the rent of land, a profit of \$17 an acre.

I know of another young man whose acre cost him after delivery, and he lives nine miles from the factory, about \$43, and the price received would be \$80.00, showing about \$37.00 per acre profit. These beets were raised on heavy clay soil, which is especially rich in nitrogen, and a good percentage of phosphate acid and potash.

Prof. Taylor—That question of the cost of production is a very important one. I have a statement by the manager of a large cattle company, who owned a large amount of land on which he had grown on an average something over one hundred acres of beets each year since the Grand Island factory was started. He told me that including the 1895 crop, which was unsatisfactory, he had been able to market and place upon the cars the beets in large quantities, where the expense was very high; that is, where he had to hire all his labor, at a profit at \$2.25 a ton. He is so enthusiastic as a grower, that he is trying now to arrange to get a factory very near their place, and expects to be able to do so, and in that way to have an interest beyond that as a grower.

Mr. Holmes—The Professor said something in regard to the result upon the land. I want to say that all honor is due to our honored and lamented Jerry Rusk and to Prof. Henry for the work they did in 1890 when seeds were sent around this state and very many took an interest in having them distributed. The beets were raised and sent to the Experiment Station here and chemical analyses made and it was found that Wisconsin is in the sugar belt all right; and I say all honor to those men. We are now as you might say, "right in it," ready for the factories that are to come.

Prof. Taylor—I want to answer the question as to the result upon the land of growing crops of beets. In Europe the common way is to run the beets in with a rotation of four or five years. Here the second crop of beets has some-

times been grown, but it is not considered a good plan to grow more than one beet crop until other crops have been used. We may say with certainty that it is perfectly safe to grow them in a rotation of not to exceed four or five years; and so long as the acreage of beets is to be comparatively small, that there is no danger of running out of land.

Friday A. M.

President Kellogg in the chair.

Session opened with prayer by Rev. Sarles of Sparta.

President.—We are 24 hours behind on our program and we must be brief with papers and discussions.

Mr. G. J. Kellogg—There was some unfinished business yesterday. There were some resolutions tabled. One report of a committee taken out of our hands and referred to the finance committee, and I move a reconsideration of that report in reference to the salary of editor and for the payment in regard to the past year's magazine.

Mr. A. J. Philips—I wish to make a remark. I think in the hurry of the business meeting we adopted the report too hastily. I would like it reconsidered. I do not wish a new committee appointed. I wish it referred back to the committee. Have them look the magazine over very carefully. I do not think the proportion of pay was right. I edited 140 pages, collected items where I could, and I think it was hurried through too much. I ask you to reconsider it, and refer it back to the same committee. Take a little more time.

On motion the forgoing was referred to finance committee. On motion it was decided to continue the publication of the monthly magazine another year.

On motion it was decided to make price of magazine fifty cents per year to those not members of the society.

Mr. Dart—I am an uninvited guest. I have had enough enjoyment to pay me for coming. I have a little bone to pick with Mr. Philips. He was at our meeting and had me dabbled on this girdling business. He consumed so much time that I could not get back at him. Now if you will permit me to

roast him for a few minutes, I will leave my paper for publication. This girdling idea is new to many. I went to Iowa and read about it in the meeting there. One man said "That man must have a great deal of gall to come over here from Minnesota and advise us to girdle our apple trees." That was the way it was received there. Your secretary said at the Minnesota meeting that he hoped I would confine my girdling to my own grounds. Some think girdling means killing, but it don't mean any such thing. I imagine this man is about in the same position as one of your ancient doctors in Kingston was, about all he had was cheek. Now there was a man who was very sick indeed, and this doctor heard the people talk about it. Some said he was convalescent and he did not know what it meant. He did not want to be taken back, so he said, "My God! if he has that he will die sure."

Now, as your time is short perhaps I have said enough. It was an agreement that I would only roast him and quit. That gets me even with him, that is the main point.

Girdling is a valuable thing, and will be of great benefit as soon as it is known, but you must get the idea out of your heads that "Girdling means to kill." You can girdle and do no harm. I have had a lot of trouble with this hobby. Now I girdled a tree the first of June. Girdle all around, it bore heavily last season, and did the tree no harm. I think spiral girdling is the most practical. There is nothing peculiar about it. You go at it with a saw and girdle it. You girdle as often as you need to.

Mr. Barnes—How deep do you saw?

Mr. Dart—Through the bark into the wood.

On the train I saw a man who used to live at Rockford, Ill. He had plum trees; they blighted and he had no plums at all. He girdled the trees and produced a beautiful crop.

Mr. Barnes—How long have you practiced girdling?

Mr. Dart—3 years. It is an old practice, it was probably in vogue in the Garden of Eden (one of the lost arts) I have reason to believe that the first fruit produced was produced on a girdled tree.

HOW TO CONTROL THE GROWTH AND PRODUCTIVENESS OF FRUIT TREES.

By E. H. S. Dart, Manager of the Minnesota State Tree Station.

Heretofore we have not had our fruit trees under control but have allowed them to grow on in a sort of go as you please way. Some trees are naturally early bearers others are late bearers and some never bear at all. Then some grow rapidly and some slowly which mars the beauty of the orchard. But now to use a familiar expression we have our fruit trees well in hand. We have got around them in such a way that if we invite tardy bearers to become fruitful they yield to our wishes; and if we request rampant growers to keep down they bow their heads gracefully under a load of delicious fruit. All this we accomplish in Minnesota without any permanent injury to the tree. I am sure you are all anxious to know how such very desirable results can be obtained. At a horticultural meeting in Iowa I said they were brought about by judicious girdling. A member said he thought a man must have a good deal of gall to come down there from Minnesota and advise them to girdle their apple trees. And your secretary after listening to my paper at Minneapolis spoke right out in meeting and said he hoped I would confine my girdling to Owatonna and to my own grounds. We must honor these gentlemen for loyalty to the ideas of their forefathers. They killed forest trees by girdling. Why should not their sons believe that a girdled apple tree must surely die.

Now my friends do not girdle but just check the downward flow of sap June 15th and await results. I have been experimenting on this line for three seasons. I have tried various methods and am satisfied that the best and most expeditious way is to start in on the body of the tree with a saw and cutting to the wood go down around the tree spirally so that the end of the cut is on a perpendicular line with, and several inches below the starting point. This

is likely to insure a crop of fruit the following season. On trees less than an inch and a half in diameter I prefer to use a knife cutting precisely as with the saw. I have practiced on the apple, peach, pear, plum, cherry, black walnut and butternut. In May and June 1895 I operated on about 200 apple trees of as many different varieties and from four to seven years from seed and root graft. I removed a ring of bark 1-8 of an inch wide entirely around the body of the tree. The next season nearly every one of these trees bore heavily and they are now in good condition. In the season of 1896 more than 1,000 trees were girdled by my improved method the results of which will be seen in the summer of 1897. Previous to our recent meeting at Albert Lea I supposed that the girdling hobby was exclusively my own but at that meeting Mr. Dewain Cook of Windom Minn. read a paper on girdling apples and plums. His experience has been quite extensive and as far as it has gone he corroborates my theory and practice in every particular. On his black prairie soil trees are naturally slow in coming into bearing. He planted 100 Wealthy trees setting them eight feet apart in the row, and in the summer of 1885 he girdled alternate trees. The next season he gathered 20 bushels of apples from the girdled trees while there was not a dozen apples on all of the trees not girdled. Mr. Cook says that trees girdled prior to June 15th with suffer no injury except that caused by overbearing.

TOP WORKING THE APPLE.

By Geo. J. Kellogg of Janesville.

For twenty years I have been top working the apple. My first working was on uncongenial stocks, and while I succeeded in fruiting Grimes' Golden, three barrels to the tree, later the stock failed while the top was in good condition. My variety tree of fifty kinds failed after fruiting, twenty-

four of which failed after I exhibited at the county fair repeatedly because it was on the little cherry crab and also uncongenial.

I have found the Transcendent crab formed a good union with Pewaukee, Lying Bill, N. W. Greening, Longfield, Charlottton Thaler and many others; while it is not suitable to Whitney and most of the crab family.

Tetofski, while many varieties succeed top worked on it, there are others that are not a success.

Duchess is a fair success; as a stock it has not vigor and push enough to give the best results, except that it will bring cions to fruitage quicker than more vigorous growing varieties. Nearly all varieties form a perfect union. We have about 30 varieties growing on Duchess. We find the influence of stock on cions very marked in the more early maturity of the fruit where grafted on early varieties such as Transcendent, Whitney and other early ripening crabs. We do not find the same influence to follow varieties top worked on Tetofski. The ideal stock in the limbs and for nursing work we find the Shields crab preferable.

THE FARMERS' SMALL FRUIT GARDEN.

By Mr. Hartwell, Illinois.

Most intelligent farmers would like to furnish their families with all the small fruit they could use the year round, fresh or preserved, and would take steps to do so were it not for the real or imagined difficulties that seem to confront them.

The conditions which lead to excess are simple and not hard to execute. The possibilities of failure are numerous, and an attempt to grow small fruit at random usually ends in a failure. The amount of labor necessary to produce good results is little, if any more than that required in growing any ordinary farm crop. The cultivation, if properly man-

aged, can be done mostly with a horse, and the harvesting—well, I question whether that is even a difficult problem on the farm, for the wife and children usually stand ready with a quick solution, whenever it is presented—the thing that most frequently puzzles and annoys the cook is the finding of the fruit to pick.

Let us examine some of the conditions which lead to success. When the farmer has seed corn, oats or wheat to buy or breeding stock to purchase, he selects from two or three popular varieties or breeds and is reasonably sure of good results as far as varieties or breeds are concerned. It is very different in the selection of varieties of small fruit. There is almost an endless number of varieties on the market—a list of grape vines, which lies before me as I write, has sixty-eight varieties, strawberries forty-two, raspberries, fourteen, blackberries six, most of which are spoken of by the compiler of the lists in very high terms. There is but one variety of blackberries in the list that would be of any use to you under ordinary treatment. The same is true of not more than six varieties of grapes and the list of strawberries and raspberries should be cut down in about the same proportion. The compiler of these lists has not necessarily misrepresented the varieties. A variety that does well on one kind of soil or climate, may not succeed in a different soil or climate.

Assuming that a farmer does not wish to experiment with these things, the best thing for him to do is to go to the nearest grower for the market and secure plants of such varieties as he grows in quantities and can recommend. High priced plants are usually of new varieties and this of itself is a good reason for you to let them alone. The following plants, properly cared for after they are of a bearing age, ought to produce enough fruit for any ordinary family of eight and the near neighbors. Three hundred strawberry plants, 100 each of blackberries, red and black raspberries, 12 each of grapes, currants, gooseberries and pie plant. Eight dollars would be a good living price for them.

In selecting a place for the berry patch, do not think it

necessary to take some little corner near the house and build a picket fence around it. If anything is to be picketed let it be the chickens. Place the berries some little distance away and in rows sufficiently long that the cultivating may be done chiefly by a horse. Put the pieplant, currants, gooseberries and grapes all in one row and the other plants in rows parallel to it. Set the pie-plant, gooseberries and currants four feet apart, grapes ten feet, raspberries and blackberries three feet, and strawberries from twelve to twenty inches, according to variety. The strawberry rows should be four feet apart, raspberries eight feet, and the combination row eight feet from the others. These plants can all be set in one day by one person if the ground is in good condition. Thorough cultivation, or the absence of it, is the chief cause of success or failure. A twelve toothed Planet Junior would be found a useful tool in the berry patch as well as other places on the farm.

The surface should be stirred as soon after every rain as the soil will work well. By keeping the surface thoroughly pulverized, the soil will remain moist, even through quite an extended drought, and keeping down weeds will be a comparatively easy task. Confine the strawberry rows to a space twelve inches wide and do not allow them to set too thick in a row. Cover the entire surface with a light mulch of straw, sown grass, leaves, or corn-stalks, removing the space between the rows in the spring after the hard freezing is over and the plants start to grow. After the fruit is harvested, mow the plants close to the ground and burn. Do this if possible when there is a brisk breeze in the direction of the rows and when the ground is not too dry, otherwise the burning may kill the plants. The reason for this burning is the killing of certain insect and fungus pest that, when not thus treated, may ruin the plants. Run the cultivator between the rows the same as the previous season. A new patch should be set each spring, the plants being taken from those set the previous year. Never set a plant that has been fruited once. I do not find it profitable, as a rule, to take more than two crops from the same planting.

Pruning.—Pinch back the new growth of blackberries when they are two feet high. Cut off the laterals the following spring eighteen inches or two feet; also cut out all the old wood. The tendency of blackberries and red raspberries is to set too many plants. From three to five stalks in a hill is sufficient. Judgment and experience are of much value in grape pruning. Not more than two shoots should be allowed to develop the first season and these should be cut back severely at the end of the year. The fruit is borne on the previous year's growth. Each bud will develop a shoot that will bear two, and sometimes four bunches. If the plant has made a good growth it may bear a few bunches the following season without injury. The rule in pruning is to cut back all laterals or side branches to two buds. Trellis with No. 12 wire on posts set from twelve to twenty feet apart. Prune in the fall or in the spring before the frost is out of the ground.

It pays in this climate to lay the vines down and cover with dirt or some kind of litter for winter protection. I prefer binding if it is done when they are wet. The new growth should be frequently pinched back during the growing season, otherwise an excess of vine will develop and the fruit will be inferior. If a fine quality of fruit is desired currants and gooseberries should be thinned each year after they have been set two or three years. Cut out part of the old wood and some of the new shoots. If currant worms appear on currants or gooseberries, a half teaspoonful of Paris Green or London Purple in three gallons of water applied with a sprinkler, or, better, a spray pump will destroy them. Usually one application is sufficient.

At the beginning of this paper I spoke briefly of the importance of care in selecting varieties. It is very important in strawberries especially that pistillate varieties should be set not more than twelve or fifteen feet from stamen bearing plants. The former are usually the best bearers, but they will not produce a good crop when set by themselves. The rule is to set two or three rows of pistillate to one or two

of staminate varieties. The neglect of this point is a common cause of failure of strawberries on the farm.

Varieties.—The following list of varieties, while far from exhaustive, has been thoroughly tested and is popular with most growers in northern Illinois.

Strawberries.—Pistillate, Crescent, Warfield, Staminate, Capt. Jack, and ——— Wood.

Black raspberries.—Ohio, Older, Kansas, Palmer.

Red raspberries.—Cuthbert and Turner.

Grapes.—Concord, Worden, Brighton.

Currants.—Dutch, Red, and White Victoria.

Gooseberries.—Downing.

It is probably safe to add Loudon and Columbian to the list of red raspberries. It is very debatable whether or not it is profitable for a farmer to grow small fruit for market. The production of fruit for home use is one thing and the growing of it for market is necessarily quite a different thing. Getting the fruit to market in presentable shape competing with those who grow fruit on a large scale and therefore at less expense. The difficulty of carrying anything so perishable as small fruit any considerable distance over country roads, the inconvenience of getting pickers, are considerations which must be taken into account by the person who would grow small fruit for market. Dealers who handle such things want to get them when a regular supply may be had in quantities to meet the demand, absolutely fresh and in attractive condition. There are difficulties that the farmer does not have to meet in growing small fruit for his own table. He never has to pick his fruit under ripe, there is no call for boxes or cases, and, as has been suggested, the picking is never a problem involving any difficulty in its solution. The length of time that a berry remains in prime condition for use is very short. That period is very much shortened by picking. He who has eaten berries thoroughly ripe and fresh from the vines, never wants to depend upon a grocer for his supply.

Many a time I have stood in a grocery store, especially on Saturday afternoon, watching farmers' wives looking over

stale cases of berries, leaking at the corners, the berries shriveled, possibly mouldy, and I have said to myself, "You poor creatures! How I pity you." With a mother's instinct for providing something wholesome for her family, she actually contemplated taking, and in many cases did take the poor miserable stuff five or six or even ten miles into the country over dusty roads in a lumber wagon and sits up until midnight to can them, that her children may occasionally have a change from a diet of meat, bread and potatoes.

The writer of this paper would suggest that many valuable and indispensable details, which are necessarily omitted, may be secured by becoming a member of the Horticultural Society of Wisconsin and attending its meetings.

Mr. Hartwell—I wish to thank you all for the courtesies you have extended to me, and I wish to invite you to attend our meeting next December.

AWARDS ON APPLES AT THE WINTER MEETING, FEBRUARY 5, 1897.

On seedlings the show was fine for the time of the year and the committee worked long and faithful to place the awards right. They found six that in quality and condition scored eight and nine in a scale of ten, and divided the \$3.00 premium into six equal parts, giving fifty cents each to F. H. Chappell, A. G. Tuttle, Chas. Hirschinger, J. C. Plumb, A. A. Parsons and A. J. Philips.

Other awards were as follows:

Best plate Newell, A. L. Hatch.....	\$1 00
2d, Charles Hirschinger.....	50
Best plate Hiberna, Charles Hirschinger.....	1 00
Best plate McMahan, Wm Storandt.....	1 00
2d, F. H. Chappell.....	50
Best plate Fameuse, A. H. Simon.....	1 00
2d, A. J. Hatch.....	50

Best plate Wealthy, Henry Tarrant.....	\$1 00
2d, A. H. Simon.....	50
Best plate Avista, Wm. Storandt	1 00
2d, A. J. Philips.....	50
Best plate Eureka, Wm. Storandt.....	1 00
Best plate Grimes' Golden, Charles Hirschinger.....	1 00
2d, Henry Tarrant	50
Best plate Pewaukee, A. L. Hatch.....	1 00
2d, Charles Hirschinger	50
Best plate Walbridge, Wm. Storandt.....	1 00
2d, A. J. Philips.....	50
Best plate Windsor, A. L. Hatch.....	1 00
2d, F. H. Chappell.....	50
Best plate Northwestern Greening, A. L. Hatch	1 00
2d, A. J. Philips	50
Best plate Golden Russets, Charles Hirschinger	1 00
2d, Joseph Zettel.....	50
Best plate Repka, F. H. Chappell.....	1 00
2d, Henry Tarrant	50
Best plate Longfield, Charles Hirschinger.....	1 00
2d, F. H. Chappell.....	50

GRAPE GROWING.

By J. S. McGouan of Janesville.

The subject of grape growing is as varied as are the localities in which they are grown. To keep up the price in the future, we must confine ourselves to quality rather than quantity. Heretofore we have not produced the fine bunches that would command the good price, but have let the vine set its fruit as chance might be, thus growing a large product ill formed and of inferior quality with no attractiveness, which has a great tendency to command but a fourth class price. Nice fine bunches, well grown, done up in neat packages of from 5 to 10 pounds, still command good prices.

I find another fault, and that is hurrying grapes to market as soon as they are barely colored, thus destroying the taste, for good, well ripened fruit. Now to grow fine ripened grapes

we will have to give more attention to the preparation of the soil, and particularly the condition of the subsoil; if heavy clay, it should be broken up to the depth of two feet or more. Where the whole site is underlaid with rotten lime stone so much the better.

COLOR OF SOIL.

A gray soil is best as it heats slower and retains its heat longer than a black soil, thus avoiding the many faults attending the growing of fruit on black soil, such as blight, sun scald mildew, etc.

PLANTING.

By removal from one place to another the growth of every plant and young tree receives a check. How this check can be obviated and reduced is a matter to be considered by every practical horticulturist.

SEASON TO PLANT.

All out of door trees and vines had better be planted as soon after the fall of leaves as convenient. In every case give the site of the tree or vine thorough preparation in depth and fertility.

A good preparation for fertility is leaf mould, ashes, and lime, and mulch out of a sink hole in the woods, worked up until they are well rotted.

Another important point: During the flowering week the vines that are slow to accept their own pollen should be well watched, for if it is a hot sunshine, or windy, or very rainy, in this case vines should be shaded or sheltered so as to protect their pollen from loss. This neglect is the cause very often why some of our best plums fail to set their fruit well.

Grape growing in the United States has now got to a place where we may consider it one of the foremost crops of the land, and commands the cash, whether it be sixteen to one, or some other equitable return.

Now, let me say a word first to the patriarchs of the dibble and the spade; don't do so much but do it better and the prices will be more remunerative.

Here I want to say a word to my fellow amateurs. Study closely the character and habit of the different kinds of horticultural pursuits that you may become engaged in, so as to learn the wants of the different kinds of plant life; never cut a branch or twig off any vine or tree without first having an object or purpose in view.

FRUIT GROWING IN NORTHEAST WISCONSIN.

By George Tong, Sturgeon Bay, Wis.

My name has been put on the program for this meeting without even asking whether I was competent to write a paper or not. But I suppose I am to say something but I will not promise it to be very interesting. Fruit growing in north-east Wisconsin should properly take in the counties of Door, Kewaunee, Brown and Oconto, but I can say but very little about the last three, but as Door county is my home I may be able to give you some idea of what has been done and some of the advantages and also some of the disadvantages of growing fruit in our part of the state. I will begin with fruit as generally raised by the farmer for home use and perhaps a few bushels left for market. Thousands of dollars have been spent in buying fruit trees and plants and we have on nearly every farm unless among some of the new settlers, an orchard large enough to supply the family needs of apples, cherries and plums. Currants and gooseberries have been so troubled with worms that you hardly find them in gardens now. Raspberries and blackberries are found growing in the woods in many places in the county so that farmers have not tried them to any extent. Strawberries during the last year or two has taken a great

boom and near the city especially most farmers are raising enough for home use at least. The apples raised are mostly summer and fall varieties, but winter apples are being planted now. The cherries raised are mostly Early Richmonds and the small black Morrello, which grows nearly wild, also some of the farmers have some sweet cherries planted that have done well so far. A few years ago wild plums taken from the woods were to be found in most gardens, but the European varieties have been found to do very well, so you will find Lombards and Green Gages and an assortment of varieties scattered over the county. Grapes have been found to do well in some favored localities, but are not generally planted. A few pear trees are found in bearing, but there are a great many drawbacks to their general cultivation. But I have said enough about the fruit grown by the farmer and for home use, and will now try to say something about commercial fruit-growing. What has been done and if the industry is developed what should be done. In the first place we have in Sevastopol one of the largest orchards of apples in Wisconsin, and a great many dollars worth of apples have been sold from this orchard. A few mistakes have been made in planting, but taking it on the whole it shows what can be done. This year the crop of all kinds of fruit was large, especially summer and fall apples, and prices very low, but in June just before the early apples began to come in one of the large wholesale houses in Menominee sold a barrel of apples for \$7, so that apples are not always cheap. Winter apples have always brought a fair price and often large prices in our own city, and this is also true of our neighboring cities. I will say a word about our location in regard to the market. Our city is located on Sturgeon Bay, an arm of Green Bay with the Sturgeon Bay ship canal leading to Lake Michigan. We have three different lines of boats plying between our city and the many ports of Green Bay and Lake Michigan. We have two daily lines of steamers to Chicago and Milwaukee, four boats a day to Menominee and Marinette, a daily boat to Green Bay, besides two daily trains, and we will have next

summer two daily boats to Escanaba. I think everybody will say that our shipping facilities are good enough, and freight rates are right too. Now a word as to our markets. We have markets north of us that will take thousands of barrels of apples which are supplied from places farther away than we are. Now our fruit nearly all ripens later than in most places, and it has been proven that even our summer apples have a better chance in the markets on that account. Now we do not claim that we can raise better fruit than some of our great fruit centers, but we do say that when our apples are grown properly we will not take a back seat for any of them in quality, size, firmness and long keeping qualities. Then we have the great northwest with mammoth markets that are nearer us than the place where most of their apples are obtained. And then again turning south our apples have already obtained a name in Chicago and Milwaukee markets, if we only raise them properly and in quantities large enough to make Door county a fruit center. It is so with our other fruits that have been put on to the market. Our strawberries especially have had such praise in the markets we have shipped to, that if it continues it will be apt to make us vain. But praise is not all we have received for our berries, but this year we competed with Michigan berries in the Menominee market and received fully 25 per cent. more than did the growers across the lake. I have found also that certain varieties of cherries ripen with us at such a time that they have the market almost all to themselves.

Now I think I have said enough about our markets for any one to see that in that way we are all right. Now a little about growing the fruit. Mr. Joseph Zettle, our veteran orchardist, has growing in his orchard nearly 100 kinds, and he has proven without doubt that all the varieties that can be raised in any part of the state can be raised here, and other kinds are found growing here that in other parts of the state they would not think of growing. I have been told that cherry and plum trees are short lived, but I know of Early Richmond cherry trees that are twenty years old

and still healthy and bearing large crops, and I know of one that is 28 years old and is still bearing, as it has always done, large crops. On our place are Green Gage plum trees that are 24 years old and are still bearing large crops. Parties who know claim the Red Astrakan apple is a shy bearer, but here they are good annual bearers.

Now about small fruits: we do not claim that Door county is the garden of Eden for fruit, but we do claim that we have as good a place to grow small fruit as any in Wisconsin. We can raise strawberries and as good ones as can be grown any where, and of better quality and firmer than in many places. Blackberries and raspberries have not been raised here to any great extent, but what has been raised here was of the best quality and very firm. I have seen blackberries growing in the woods that were wonderful to look at.

There are many of our farmers, especially near the city, that are turning their attention to fruit growing. Some have already planted, and this coming spring several orchards of some size are to be planted. Cherries are being planted quite largely. Of the small fruits strawberries lead and nearly 40 acres of new beds will bear next June and many acres will be planted next spring. Blackberries, raspberries and currants are being planted to some extent. We have not been bothered but a little with the curculio, so that plums are being planted quite extensively. Hatch, Bingham and Goff have the largest plantation, which contains ten acres. Now, I see no reason why northeast Wisconsin should not become a fruit growing center, our climate differs somewhat from the rest of the state, and I guess a little in our favor. We have disadvantages also, our climate while good is not perfect, we are not exempt from extreme cold and long droughts, late frosts in the spring and early frosts in the fall. We are also starting in at a time when many other localities are also being developed so that close competition must be expected. But by right methods and perseverance we hope to be counted

some time at least among the localities that furnish delicious fruit, that is fast becoming a necessity to the great mass of people.

REPORT OF COMMITTEES ON AWARDS.

AWARDS ON POTATOES.

- Best display, A. D. Barnes first.
- Best display, Henry Tarrant second.
- Best seedling 2 years old, A. D. Barnes first.
- Best seedling 2 years old, A. D. Barnes second.
- Best half peck early, A. D. Barnes first.
- Best half peck early, G. J. Kellogg second.
- Best half pack late, A. D. Barnes first.
- Best half peck late, G. J. Kellogg second.

Friday A. M.

PAPER BY MR. HARTWELL OF THE NORTHERN ILL. HORTICULTURAL SOCIETY.

Mr. Hartwell—Northern Illinois is getting jealous of you because I come here so frequently. My visits to you are of more help to our society than any other one thing. I feel under an obligation to this society for the assistance it has given us. Horticulture in northern Illinois is similar to Wisconsin as I understand it, but our people have it in their heads that they cannot grow apples at all, and when I came here three years ago and found you enthusiastic on the apple question, I told them about it and they felt ashamed. Our society then picked up and now we can compare with you in enthusiasm.

Being a stranger some of your people have confided with me a little bit, you seem to have formed some little divisions among you. I never saw an organization that did not

have. One man has a decided notion in his head and he moved the world. I believe in cranks. They are the things that run and set things in motion. A man can be a crank without being a fool. I don't care for a man that develops on all lines, because he cannot do it.

A man who has no faith in an organization cannot make any progress. I want you to believe in these men who are working for you. If you find something that is wrong, then step on it. This paper I have was written for northern Illinois, but I brought it here thinking your discussions would adapt it to Wisconsin.

Mr. Barnes—I move that we change that word northern Illinois to Wisconsin.

President—It is so changed.

Mr. Hartwell—I think I can emphasize that point from personal experience. Now as a teacher in the high school where science is taught, I ought to be familiar with these things. A neighbor gave me 500 strawberry plants, 200 of them were staminate variety, and the rest of different varieties. When I came to gather the fruit from those vines they were all Crescents.

Mr. Tuttle—I believe I am the first one who received a Crescent in this state. I received plants enough to set two-thirds of an acre. They were set four feet apart each way. They were set on one side of another variety. This was the best crop of Crescents I ever grew, 100 bushels of them to two-thirds of an acre, there was hardly 1 foot of ground that was not covered with fruit.

Q.—How long were your rows?

Mr. Tuttle—Twelve rods.

Q.—How wide was the plat?

Mr. Tuttle—Ten rods or so in width. There was a mass of fruit over the whole ground. The Crescent needs a fertilizer. A man in our neighborhood used hops for manure, the next year he had no fruit. He plowed up most of the plants and what was left bore a good crop.

Mr. Hartwell—Dr. Miller brought up the point that the

pollen of a plant is sometimes ready to do its function, when the pistil is not ready to take it.

Call for Prof. Green.

Prof. Green—I think along this point we lack good evidence. I think as a rule where we cross fertilize we get the best results, best seed, best vessel to hold the seed. They are not so productive to their own pollen as they are to other varieties. My experience shows that the Crescent will produce its own pollen. From the work done at experiment stations, I saw some of the most interesting things I ever saw. It was work done at the Illinois station, cross fertilization of corn. One thing I remember very plainly in connection with it was this, in the crossing of corn that corn could not be fertilized by its own pollen. Cross fertilizing has been introduced in wheat, oats and barley, and even there where the stamens have been taken out the cross fertilizing increased the seed production. If you have no fertilizer you have no receptacle, now it seems to me that the better you fertilize the probabilities are the better receptacle you have, and I believe in cross fertilization, yet I say I cannot answer the question, I simply talk in a general way about it, as it seems to me perhaps, that is as far as the cross fertilizing question will warrant us in going.

This year I hear people complain about nubbins in their strawberries, and I think it is the result of a lack of winter protection. A heavy cover will do away with nubbins—10 inches of solid straw.

Mr. Chappel—I would like to say that about 3 years ago we had a cold wet time, a severe winter. It was sometime in May the strawberries were nubbie and many of them lost their fruit.

Mr. Sarles—In view of what Prof. Green said, I should try this experiment, just before it freezes up, run a plow through the field, throw a furrow over the plants, instead of covering. This is the best possible protection.

Prof. Green—I enjoyed your meeting very much indeed, and thank you very much for your courtesy. I wish to say good-bye. I know that the Wisconsin State Horticultural

Society has done good work and is doing good work. Its foundation is built up by high minded men, and I am very glad to come here and meet men of a national reputation.

Mr. Sarles—I think we can offer some expression of gratitude to the Professor. We consider it a high honor to have him come and be instructed by what he says. I am of the firm opinion that Eden will be restored to the world again and that we will overcome the swords. We are overcoming the flaming swords, and Professor Green is green in name only, in other respects he is fully ripe. We invite him to come again.

Prof. Green invites members to visit Minnesota Society.

Mr. G. J. Kellogg—I move that a special vote of thanks be extended to Professor Lugger.

Motion carried.

President—Now we can take up the subject of plant distribution for the coming year. Do you wish to continue it?

Mr. Hirschinger—I move that the free distribution of plants be discontinued for the coming year.

Mr. Kellogg—I am hardly ready to bury it without a little speech on the question. It has been comparatively a failure. Successes have been few. Members have failed to get any benefit out of it. I am ready to give it up for the present year. I do not know where the fault has been, lack of packing, or varieties sent out. I am not satisfied with the result.

Mr. Herbst—Perhaps I can offer a little explanation. I do not get but 6 per cent. of the total number of those who sent in applications that reported last year. We cannot tell anything of the other 94 per cent. who received plants and did not report.

Mr. Toole—I am in favor of suspending it for one year.

On motion it was decided to discontinue plant distribution for one year.

Mr. Read—I move the time to be set for the payment of the \$4.00 for life memberships be the first of July.

Motion carried.

Friday P. M.

President Kellogg in the chair.

President—Are there any suggestions to make or reports of committees before we proceed with our regular program?

Mr. Kellogg—I have a little report on fruit lists, but it may not be of great consequence, and I do not know that it is necessary to bring in at this time.

President—First topic on our program for this afternoon is

WILLIAM A. SPRINGER.

By J. Wakefield, Fremont.

The subject of this sketch was born in North Hill, Grand Isle county, Vermont, April 21, 1818. While he was a small child his parents moved to Moers, Clinton county, New York.

From about 1841 or 1842 until 1847, he was engaged in lumbering in Canada, a portion of the time rafting on the St. Lawrence river. March 13, 1847, he was married to Miss Joanna Eaton, an estimable lady, who proved a true helpmate through all the trying years of their pioneer life in Wisconsin. She died October 17, 1881, at Fremont.

From 1847, until he came west, he was engaged in farming and carpenter work. He came west in company with his father and brother Andrew in November, 1849. His brother-in-law, C. F. Eaton, preceded him a few months before. He first settled in Little River, now Evanswood, Waupaca county. In 1851 he moved to Fremont, preempting a tract of government land, which he finally entered, upon which he settled. He subsequently on a portion of it, laid out a village giving it the name of "Springer's Point." It is now incorporated with and forms a part of the village of Fremont.

In 1874 he built a commodious brick residence, a mile or more from the village, in which he lived until his death.

About two or three years after the death of his wife, he married Mrs. Lenora J. Springer, widow of his brother Andrew, the writer of this article officiating.

At one time Mr. Springer was quite a land owner, has bought and exchanged land very extensively, and has probably cleared and improved as many acres as any man in the county.

As a pioneer he did much towards the settlement and development of our county. But the best part of his life work for which he was best known, and will be longest remembered, was his labor in the cause of horticulture. It was nearly a hobby with him. Fruit and flowers, two of God's best earthly gifts to mortals, were his inspiration almost his very life. At nearly every fair or horticultural meeting friend Springer would be on hand with his basket of fruits or flowers, not for speculation, but for free distribution among those who could appreciate such things. Surely such a lover of flowers could not have a heart much out of place.

He was an honorary life member of this society, and proprietor of the Fremont nursery. He has probably originated or brought into notice more valuable seedling apples than any other man in the county.

His death was caused by paralysis. After lying helpless for some time, the change came December 3, 1895.

Only a few weeks before his death he called on me and requested me to draw up his will, saying that he had a conviction that his life was near its close. I could not think that death was so near, and when the document was placed in my care, I flattered myself that it might be years before it would be necessary to file it with the probate court. But who can look far into the future, or even guess what that future may bring?

He took a great interest in the New Orleans Exposition, and also in the World's Fair at Chicago, spending weeks in collecting fruits and other products of our state, and helping place them on exhibition, adding much by his counsel and assistance in making the grand display that Wisconsin people were so justly proud of. He received several diplomas, and a medal, also flattering mention.

He was a man of strong convictions. An opinion once formed could not be easily changed. He was a good neighbor

and as a citizen, was respected. The world may have better men but it would be much harder to find such than the reverse.

His work is done. That work was too well and too favorably known to need any further eulogy from me. But he will be missed, missed by his family, missed by the community, missed by our local societies and the state society will not soon forget William A. Springer.

B. S. Hoxie—Everybody knew Mr. Springer, but I want to mention one incident that will show his unselfishness. At the time we were planning to set out trees at the World's Fair, we were all of the opinion that the best man we could find to do the work would be Mr. Springer. He sent his bill down to me, and only charged \$1.25 for himself and hired man, \$1.50 per day for his team. I simply wrote to him saying "How much is your time worth? \$1.25 is not enough. Please amend your bill." He added 25 cents per day more. He was a generous man, he did the work for the Society.

A. J. Philips, Sec.—I wish to add that what has been said of Mr. Springer has not been overdrawn. He was the most unselfish man I ever knew. When I was offered a chance by Secretary Hoxie to spend two weeks in charge of exhibit at the world's fair, I said in reply, "If there are any especial favors due me I wish them transferred to Wm. A. Springer as he is deserving of them; and they were transferred to him. Many days I spent with him, and on my last visit we went and saw the old Ratsburg tree, whose first crop of 23 apples weighed 25 pounds. Everything in the shape of fruits and flowers, with him were free. Brother Wakefield spoke the truth when he said he will be missed—by all—when I go through my orchard and see the Wolf River, the Mary, the Jenny, the Ratsburg, the Alden, the Lewis, Duchess and others, my thoughts go to Uncle Springer. Let us cherish his memory. On motion it was resolved to send a memorial volume of our transactions to each member of Mr. Springer's family.

President—Mr. Wakefield will please make a list of the members of the family and submit the same to Mr. Philips.

On motion this resolution was referred to the committee of resolutions..

President—I have another matter which I was to present, entrusted to me by Prof. Goff, in regard to the San Jose scale, a matter which I think should receive prompt attention at this time, as there is an effort being made to have each state pass uniform laws to prevent the spread of the disease. We must do what we can to prevent it. The Professor wants the Society to take action in the matter. There might be some legislation during this session of the legislature.

Mr. Hoxie—The committee must act promptly; it must be relative to that.

President—Prof. Goff is anxious that the committee take some action in the matter; that the committee on legislation be vested with authority to act in this matter.

Mr. Hatch—We voted to have him go to Washington.

Mr. Hoxie—The committee must act promptly; it must be introduced before the 10th.

Mr. Holmes—I make the motion that the legislative committee be in power to press the action and have the bill before the legislature.

President—It has been moved and seconded that this matter be referred to the committee on legislation and that immediate action be urged on the matter.

Motion carried.

President—The next topic on the programme is

VALUE OF NEW SEEDLING APPLES.

By A. L. Hatch.

Now we want to look at the situation exactly as it stands. What are we go get out of it? The most important thing that we can do is to fortify ourselves with something new. It is human nature that we want to succeed. If a nurseryman has a variety that nobody else has, he will make any asser-

tion in regard to it. There are a good many possibilities to hope for in the new seedling apple. We are waiting for someone to develop some variety. It does not necessarily follow that you must have the best variety there is. I have had 25 years' experience. There is no best variety. That to which you give the culture, that to which you give good management, that to which you will give the chance to supply itself with good, sound elements of growth to make healthy foliage, a common-sense way of handling, a good site, is what you should chase after, not varieties. I take pride in the fact that 28 years ago I cut scions from the McMahan, a variety grown in most states and recommended by horticultural societies.

(Shows sample.) It was planted by an old lady in 1860, and brought to Richland county. In 1870 we propagated it. They bring money in the market.

Now, here is another variety that originated in Sauk county (shows sample) from 11 trees, 27 barrels, Newell or Orange Winter. It is a good thing.

Mr. Hoxie—How many years ago was the Newell planted?

Mr. Hatch—I have grown it for 25 years. We take pride in these new things, and there are many others that will do the same thing for us if planted right and cultivated. No matter how good a variety, if not treated right, it will not succeed. Make the variety do its best. Well, this year I had 200 barrels of Snow apples. President Kellogg wanted them. They were grown on trees that at one time were very scabby. Nothing is worth more than the other thing, except the difference between that and the other, and we must remember that our seedlings must compete with the old standard varieties, while they come to us with nothing but the hopes of the originator.

Now, there is another feature in this seedling situation that I want to call your attention to. We must be honest in our business. Let us not do something that we would afterwards like to undo.

Another feature I wish to call your attention to is the matter of testing. Most generally the selection of apples is altogether too mild. If you want a good keeping apple get a

sour apple, especially if it does not mellow down right away. We have a tendency to go in the wrong direction. Get the market judgment, not our own judgment. We tried our judgment against the market judgment and it would not go; they would not take it. I take the conservative side of the matter. The Baldwin, a seedling apple grown here, originated here. I do not wish to make a choice, just illustrate the idea. It is this: Now, suppose you have this coming from Canada. It is doing successfully, healthy foliage, bears well. We must not be too enthusiastic over the seedling question. They are coming to us from Door and Wau-paca counties, and the time will come when we will say, "Where are we at?"

President—Are there any questions in regard to the seedling apples?

Mr. Chappell—Mr. Hatch tried to show the object of raising for the general purpose, apples for the market. For the general farmer's purpose, what the farmer wants is not what they want in Chicago, and because the Snow apple may sell there, we have something just as good here and our market is getting different from the Chicago market. I say we want to know these things and get what the general farmer wants.

President—The next subject on our program—

Mr. Philips—I have a letter that ought to be read from one of our members from Hanover, Wis., from Mr. Schofield.

Reads letter.

President—Reads memorial.

It has been moved and seconded that this memorial be referred to the committee on legislation.

Motion carried.

Call for Mr. Schumacher of Calumet county.

Mr. Schumacher—I do not know as I have anything of special importance to say. It has been a privilege for me to meet with you. I enjoyed the disagreements that appeared here, as we are told that our greatest calms are after a storm. In regard to our local society, I would say that I handed in a small report. There is considerable interest

manifested by farmers in our vicinity who are beginning to realize the want of fruit, and I think the time is coming when it will be planted.

Mr. Barnes—How often do you hold your meetings?

Mr. Schumacher—Every two weeks, at private residences.

Mr. Barnes—How many members have you?

Mr. Schumacher—About twenty-five.

Mr. Barnes—What is your membership fee?

Mr. Schumacher—So far we have not adopted any. Gratis for the fact that we have no expenses, but we took it up at our last meeting and expect to adopt a membership fee.

Reports on new trial orchard.

Mr. Barnes—I might just say a few words. Mr. Philips has covered the ground quite thoroughly.

I would say that the orchard is grandly located, elegant site, properly designed and well conducted. I believe this experimental orchard does more good to two-thirds of Wisconsin than all the other experimental orchards of the state. It is located on a public highway, and near the railroad, so that many visitors can come and see it. Very much interest is taken in the orchard. I hope the work will continue. The prospects of this orchard becoming successful are grand. I think it could not possibly have been placed in a better location.

Mr. B. S. Hoxie—I do not think we ought to brag too much on that orchard. We must not put too much in our reports, until we know more of it.

Mr. Kellogg—Has the trial orchard at Sparta been given up?

Mr. Herbst—I think it has.

E. H. S. Dart—As a one horse delegate, I do not know as I need to make a report after that of Mr. Converse or care to take up your time, but certainly Minnesota had one of the finest shows of fruit. Minnesota is right abreast of the times; they take more pains, spend more money. They had a fine programme sufficient to last three weeks, and rushed it through in three days.

Mr. Philips—Do you mean they brought out more good seedlings?

Mr. Dart—For the time they were working on it.

Mr. Hoxie—I think that it ought to be a rule that all delegates to the state society must make a report. Have all reported?

Mr. Holmes—I forgot to bring a written report.

Mr. Hoxie—The report on the World's Fair was creditable.

A. G. Tuttle—Three years ago I went to Minnesota to show some fruit. I made 11 entries and got 11 first premiums.

Mr. Philips—They have never allowed us Wisconsin fellows to show since.

Mr. Hatch—I hope, Mr. President, that you will give the remaining time to small fruit interests. I am an apple man. Can we not have something on raspberries, strawberries, etc.?

President—Next topic on our programme is "Two Best Raspberries," R. J. Coe.

Mr. Coe—The question with me for the last 20 years is to find out that very same thing. I have been growing them for the last 20 years. I can tell you which two have done the best with us and have made the most money,—the Ohio and Older, but I am not prepared to say that they are the best. I hardly believe it myself yet, but two have made for us the most money. They are blackberries. You understand that you must take this from a personal standpoint from Fort Atkinson and not from the state, and I simply mention these two as giving the best results.

Mr. Hatch—What is the outlook?

Mr. Coe—From my own standpoint I would say that it is good. We have had no trouble in marketing all that we can grow.

Mr. Hatch—Can you grow the black raspberries cheaper than the red?

Mr. Coe—Yes. I have noticed this much, that we get our best crops on plants not more than 4 years old. After that the canes become smaller, less branches; consequently smaller crops. I should renew same often.

Mr. Holmes—What black raspberry is your favorite?

Mr. Coe—That is a hard question to answer. The Nemaha is hardier than the Gregg. There is so little difference between the price of the berries.

Mr. Moyle—Does it pay to mulch these berries?

Mr. Coe—I do not think it is advisable to artificially mulch. Clean cultivation, no weeds, and the berries must grow. The question of planting enters into the condition of successful growth. Berries have often failed from being planted too close.

Mr. Tuttle—How about the Kansas?

Mr. Coe—It is the best early berry.

President Kellogg—In relation to planting, 4 to 5 feet apart and rows 7 feet apart. You will get more fruit than you will by close planting.

Mr. A. L. Hatch—I would like to have Mr. Kellogg's knowledge upon raspberries.

Mr. Geo. J. Kellogg—I would like to ask the question as to whether they had any reds. I have come to the conclusion from watching Loudons and Columbian and from my own experience, there is nothing equal to the Loudon for a red raspberry. I do not go back on the Brandywine, Cuthbert, Turner, Marlboro, and Shaffer.

Question—What is the matter with the Shaffer?

Answer—The Shaffer is not a red berry, it is purple.

Question—How about the Columbian?

Answer—It has more vigor and growth than the Shaffer, but side by side I could not tell the berries apart.

Mr. Toole—In Baraboo the reds did better than the black the past season. I have grown blacks for 16 years and have not renewed my plantation. As regards reds, the Cuthbert and Marlboro are kinds that paid well this season; the Cuthbert especially is receiving preference.

Mr. Coe—I would like to say that in regard to the Loudon and Columbia I hardly thought it advisable to recommend these varieties. They are new varieties. I do not believe they are the best, but if we talk of anything of this kind, we must talk of something that has been proven.

Mr. Coe—Mr. Kellogg said you could not tell the Columbian from the Shaffer.

Mr. Kellogg—I picked them at Mr. Plumb's nursery, and you could not tell them apart when you held them in your hands,

Mr. Coe—I can pick them out not from their color, but from the condition of the berry. The seeds are smaller and more compact than the Shaffer.

Mr. Adams—I visited the original plantation of the Columbians the 1st day of June—a field of 15 acres. The fruit was not ripe, some were a little tinged. It was the nicest fruit of its kind I ever saw. It had not its full size. The bushes were the largest I ever saw. I could hardly reach the top of the bushes. I never saw anything that could compare with it in the fruit line. This was in New York. They were in excellent condition to the tips. The climate is not so severe there, and I wondered if the berry would be hardy in Wisconsin. I noticed some of the rows had been cut off some 2 feet some time during the spring; I did not know what for; I could not judge. I did not see the proprietor of the plantation. I wanted an estimate of the quantity of fruit on those 15 acres. They said at least 100,000 quarts, some 8,000 or 9,000 quarts to the acre. The texture of this berry is much firmer than the Colossal. It is canned largely in the state of New York. It is called the best canning red raspberry there is. Of course it might succeed in this climate; I do not know.

Mr. Coe—I saw that field a year before Mr. Adams did, in full fruit—the same 15 acres. Just imagine, Mr. Adams, if you had seen it 5 or 6 weeks later, where they took fruit from it by the carload, I should judge. It was outselling all others in the market at 5 cents per quart. I want to say one word in regard to its hardiness. Last winter they had three days in succession 40 degrees below zero. The canes were injured, still they bore a good crop.

Mr. Adams—Forty degrees at Oneida?

Mr. Coe—A man made this statement to me.

Mr. Herbst—How many years ago was this? Have you ever heard of its giving a yield like that again?

Mr. Coe—Yes, sir.

Mr. Philips—My wife prefers the Columbian because she can pick at one bush a dish full without moving to another. This year they grew tall. Mr. Harris thinks that they could

get 1 peck to a bush. My wife said, "Cover them," and I said, "There is not enough straw on the farm to do it."

Mr. Edwards—A year after Mr. Coe was there I visited it in September. I never saw such canes in my life. If they would do as well here as they do there, it is a fine thing.

Mr. Holmes—I would like to ask of Mr. Kellogg or any others in regard to these tall bushes, would it not be best to cut them off?

Mr. Kellogg—If you would cut them back they would start out much larger. I do not think in ordinary soil you will have to pinch them in very much. They have not grown 10 feet with me and I hope they can stand 40 degrees below zero; 40 degrees in that part of New York, I hope that is correct.

Mr. Adams—I examined that field pretty closely.

Mr. Toole—It does not seem to me that the Loudon and the Columbian ought to be compared.

Mr. Moyle—Mr. Adams told us that he did not know why they were cut off a foot or so. We never protect our raspberries; we let them take their chances. The Columbian is a fine berry. I am in favor of pushing the Old Columbian.

President Kellogg—The condition covering the best gooseberries will refer back to the preparation of the soil, planting and other conditions. I do not think that it will be necessary to go through these conditions which have been given many times. The gooseberry that is giving the best satisfaction is the Downing; we have several others. The Queen is a gooseberry of the English type. It has never been tested, but it gives promise of a good thing. In order to get the best gooseberry of any variety, give the plants plenty of room. I would advise planting no closer than 7 feet apart, 5 feet apart to the row.

Mr. Chappell—My opinion is that 10 feet is better than 7 feet. They get more moisture in that way, and it is handier to get into mulch and cultivate.

Mr. Hatch—Would we make any mistake in planting gooseberries 8 feet apart each way?

Mr. Kellogg—I do not think it will be necessary; they will not occupy the ground.

Mr. Hatch—Eight feet is little enough from what I have seen. I do not want to crowd. If they are 7 feet apart the bushes would touch.

Mr. Barnes—It makes a good deal of difference what variety of gooseberry you are growing.

Mr. Moyle—I plant 8 feet one way, 4 feet in the row.

Mr. Tuttle—I have a quantity of currants set 8 feet by 3 feet. If I were to set large quantities I would put them 7 feet apart each way.

Mr. Read—I have about 2 or 3 acres of currants, planted 7 feet each way.

Call for Mr. Herbst on the Pearl gooseberry.

Mr. Herbst—I cannot tell you anything about the Pearl. We are not growing that. We have a 4 acre patch of the Downing. They are planted in rows 7 feet apart and 4 feet apart in the row. These are now 4 years old, and the canes are now touching each other in some places. It is my opinion that it is not possible to keep them in tree form. I am inclined to think they should be planted in rows 7 feet apart, 5 feet in the row.

President Kellogg—I have had 5 years' experience with the Pearl. Its fruit is similar to the Downing, trifle larger. It is claimed to be a seedling of the Downing. There is no difference in color. Blooms as early as the Downing, same season of ripening. Berry is a trifle earlier.

Mr. Hatch—In regard to picking and marketing of these it is not necessary to pick them any particular day. It is true that you can find them in good market condition any day.

Mr. Kellogg—You can begin picking the gooseberry because they do not get the same size at all times.

Mr. Hatch—Would you think it advisable to go over the bushes twice at least?

Mr. Kellogg—Yes. We clean our grounds all at one picking.

Mr. Toole—Is there any demand for ripe gooseberries?

Mr. Kellogg—Yes.

Mr. Tuttle—You are not obliged to pick the currant the day it is ripe. We shipped last year the Victoria; the Holland is

a later berry. We got 60 cents. We sent to Duluth, St. Paul and West Superior.

Prof. Goff—I would like to know the experience of the North Star currant.

Mr. Edwards—Last year we set several bushes of the North Star. They produced good crop, but whether they will be better than the Red Dutch and Victoria, but they were not better in size or quality that I could see.

Mr. Barnes—I have a few plants of the North Star that fruited two or three times. They were vigorous plants. I do not consider them better in quality than any of the others; they are rather smaller.

Mr. Tuttle—I would like to call attention to a currant that has not been named. It is a promising currant. It is the Versales.

Mr. Adams—I like the currant well.

Mr. Tuttle—I would like to know if Mr. Hatch knows anything about Sturgeon Bay blackberries?

Prof. Goff—Mr. Molton of Sturgeon Bay secured the Bangor. So far as we know it is a dwarf. It grows low. Mr. Molton is pleased with it. Mr. Stickney, who saw it, thinks it is valuable on account of its being a dwarf. It can easily be protected.

Mr. Tongs—I have seen it and am very much pleased with it.

On motion report of committee on fruit list was adopted.

President—Is there anything further?

Mr. Kellogg—I move that all unfinished business be referred to the executive committee.

Motion carried.

On motion adjourned.

La Crescent, Minn., Feb. 2nd, 1897.

A. J. Philips, Secretary of the Wisconsin State Horticultural Society, Madison, Wis.

Dear Sir.—I had counted very firmly on being present at this meeting of the Wis. Hort. Society and enjoying a hand-

shake and a cordial greeting of the "Old Veterans" of horticulture, who have worked together, shoulder to shoulder with me in settling the question of an abundance of the best of fruit and the most beautiful and comfortable homes for our people of our northwest. But providence has ordered otherwise through sickness in my family. Please remember me with best wishes to Tuttle, Stickney, Chappell, Goff, and a score of others. That you may have a pleasant time is the sincere wish of

Yours truly,

J. S. Harris.

REPORT OF F. C. EDWARDS, DELEGATE TO THE
IOWA STATE MEETING.

Your delegate was present at Des Moines at the 31st annual session of the Iowa State Horticultural Society, December 8, 9, 10, which was held in the capitol building, a magnificent structure, costing over \$3,000,000; two rooms were used and fruit display was in the center of the building in the hall way and was very creditable. Attendance ranged from 75 to 200 during the sessions.

Their programme said sixty papers were to be read and discussed, besides election of officers and reading of reports. This meant business, and in my opinion too much for a proper discussion on subjects presented.

But with a few Berryhills, Von Houtons, Wraggs, Pattens, Watrous and others, much can be done. I wish Wisconsin could stir up more material of this sort as I believe we possess it.

The Wisconsin delegate was made an honorary member, kindly treated and well entertained; when called upon for remarks, briefly outlined movements in horticulture in our state.

Iowa seems to be thoroughly organized into societies. There is the N. E.—S. E.—N. W.—S. W.—all fees to these societies are \$1.00. Each of these have \$150 from the state so-

ciety annually. There are three fruit districts—northern central and southern, each having experimental stations using yearly about \$1,000 in experimenting. Under these different societies there are about 20 experimental stations. There are 12 directors, elected each year comprising the whole state who report on all kinds of fruit. Tuesday forenoon was occupied by reports from these 12 directors on the failures or successes of all fruits in Iowa.

Delegates from other states—A. A. Anderson, Minn.; H. Augustine, Ill., and J. N. Meriffee, Missouri.

Tuesday Afternoon—Pres. F. M. Powell's address and recommendations were very good.

Secretary George Von Houton's report and address was very able and showed the society very progressive.

Commercial Orchardling was presented by Elmer Reeves, who said for northern Iowa there was no strictly winter sort of apples thoroughly reliable—but plenty of summer and fall sorts.

Hardin Tice, representative southern district, and M. J. Graham, representative of central district, after which was a general discussion. Mr. Tice said he plowed his trees in and did not cultivate. But the majority advised cultivation till August 1. The mulch question was discussed and about one-half present were favorable to it; the balance believed in the dust blanket and a proper use of fertilizers.

Evolution of Horticulture was presented by Eugene Secor in a poetical style, dating from Eve's temptation to the present time, and so fine in arrangement as to merit the printing in full by the leading Iowa papers. A copy was sent to our president. I wish all could read it.

Thursday Evening.—Comparison of Oriental and Occidental horticulture was presented by George Von Houton, who has visited Japan, Egypt, Russia, Palestine and other countries. He said: "Japan is a fine place for fruit, and every available foot of soil is used. Palestine is the most natural place for flowers in the world. Fruit culture is discouraged by the Turkish government. In Egypt pears are trained on trellises the same as grapes—but they are of poor quality.

Oranges are good; chrysanthemums are the natural flower. Russian fruits of all sorts are poor in quality—the trees are dying badly over the empire.” He said that Iowa, Wisconsin, Missouri and the belt of states running east of these are by the aid of our government, making the best success of raising all sorts of fruit than any place in the world.

Prof. Taylor, superintendent of Nebraska Institutes, gave a very instructive talk on Russian fruits. He was delegated by our government to visit that country in the interest of fruit. The man who gave the passport was surprised at our sending a man to investigate their fruits as, in his opinion, it ought to be the other way, as exportations there instead of importations here ought to be practiced. He said the quality of Russian fruit was poor of all kinds. No raspberries or blackberries were there. Very few currants or gooseberries, in fact scarcely any small fruit was raised. The lay of the country and the soil was much like ours. Poland pays the most attention to fruit raising.

Colonel Watrous made an attack upon Prof. Budd for conducting a commercial nursery on the experimental farm. He said from \$3,000 to \$6,000 worth of stock was sold annually in competition with Iowa nurseries. This statement apparently had the endorsement of the entire meeting. He called it a disgrace to the state of Iowa.

Wednesday morning—National Encouragement of Forestry was handled by Prof. C. A. Keffer, of Washington, D. C. He deplored the cutting of the eastern forests and the northern pine, selecting the best, and recommending national action on their preservation.

Influence of Forests on Rainfall by J. R. Sage. Said that forests do not promote rainfall but rainfall promotes forests. They do not lower the temperature. They originally covered 60 per cent of the United States. There was not over one-third as much evaporation from forests as open country with no timber. Office of forests, rain-conservators and not rain-makers. He said according to statistics, Iowa has more rain in the summer than Wisconsin; but exactly the reverse in the winter season.

Soil Management by H. W. Shaul. Said (1st) moderate climatic evils by drainage, etc. (2nd) supply humus of the soil and it should be so cultivated that rain would go into and not run from the soil surface.

Prof. King of Madison was quoted on the 3 inch dust blanket. By the way, the Wisconsin horticultural and agricultural schools are held in high esteem by our neighboring states for the work they are doing.

Improved breeding of plant and animal life by A. G. Lucas, an editor in Des Moines, who said: "Animal and vegetable life are easily distinguished in their higher forms. But in their lower forms, it is almost impossible to discriminate between them. He said that reproduction was the most important of life's functions. The sacrifice of the plant for the seed even went to death, sometimes to produce it. Plant and animal life are the same in reproduction. Crossing kindred sorts commended, but violent crosses denounced. The same is true with good live stock breeders.

Wednesday afternoon—"Fruit Tree Culture" was taken up by R. P. Spear and others, who said this year Iowa had a large crop of apples, low prices. But the profits were better here in central and southern Iowa districts under intelligent work than any other branch of farming. One thing is certain; the varieties used in central and southern Iowa are quite different from northern Iowa. M. J. Wragg said plums did not bear this year very good because of lack of pollen, and he think they will exhaust themselves by heavy bearing without you will properly fertilize them. In regard to the varieties used in Iowa consensus of opinion seemed to be De Soto, Hawkeye, Rockford and Wyant.

Small Fruit papers were presented by L. O. Williams, C. F. Gardner, D. L. Heinsheimer, M. J. Wragg and others. P. F. Kinne, who presented the Farmer's Fruit Garden, said it was better to live on a fruit basis than gold basis. He said 50 per cent. of the farmers of Iowa do not raise, but buy their fruit, and not over 10 per cent. raise any surplus.

M. J. Wragg gave a paper on Blackberry Culture, who said Iowa had a good soil for blackberries and its culture was neg-

lected. He recommended deep plowing, cultivate shallow and a proper use of the dust blanket. I was somewhat disappointed in the interest manifested on the small fruit questions and expressed myself to this effect. But the facts are these, 1895 treated Iowa even worse, I judge, than Wisconsin on all kinds of small fruit.

Wednesday evening was the election of officers, which resulted in reinstating all, after which "Care and Ornamenting of School Grounds" was presented by H. Sabin, state superintendent. He recommended the planting of trees and plants in the school yards by pupils for two reasons. First, beautifying the grounds, and, second, educating love and care of plant life in the youth and the rudiments of horticulture and floriculture taught in text books.

"Fruit and Health" was treated by Dr. Finlayson. He regarded apple as a staple food; no such thing as apple dyspepsia is known.

Grape juice can be taken by the weak stomach when sweet milk is rejected.

Eating of good fresh fruit stimulates intestinal digestion.

Fruit a very necessary item in our diet to promote a perfect digestion, mastication and assimilation of all foods.

Thursday morning the "Loess Soils of Iowa" was discussed by H. Foster Baines by means of a map, showing the location of drift and loess soils. He said most of the soils of Iowa had their origin outside the state and was brought there at the glacial invasion, about 170,000 years ago. This loess soil is best for fruit. But the drift soils is their best land for cereals.

"Commercial Growing of Cherries" was presented by J. B. Berryhill, and from practical knowledge was ably handled. He said for success upland was needed. He and other Iowa men recommend for stock to work on Myrbolan. In varieties E. Richmond stood first, Montmorency second, English Morello third. Some of the Russian sorts recommended for trial. His trees are planted 14 feet by 18 feet. He said the time had come for intensive culture to receive the best

results from the increased amount of labor. Best tool he had in use was cutaway harrow.

Many other papers deserve mention, but space in a report of this character would not allow it.

The secretary is paid this year \$600.00 and he keeps the Horticultural rooms open at Des Moines every day in the year to visitors, except Sundays and holidays, and makes a very able man to manage the society's interests. The \$2,500.00 paid by the Iowa people to further the interests of horticulture and floriculture is certainly wisely expended, and if we can show wisdom equal to theirs, our state representatives would gladly aid us as much. What we must do is to make a wise disposition of money given into our care. We must dispel jealousy and foster good will; let personal ambitions stand second and the good to all first. Iowa is progressive, thoughtful, earnest, and Wisconsin must profit by the example of others.

Respectfully submitted,

F. C. EDWARDS.

REPORT OF COMMITTEE ON OBSERVATION FOR MONROE COUNTY.

By J. J. Menn.

The winter of 1895-'96 was characterized by very dry freezing weather. The southeast half of this county did not get any snow to speak of, while the northwest part, taking in Sparta, had snow enough to protect the ground. Spring opened up early with very favorable growing weather and from spring to fall we could not have wished for a better season. We did not get a frost from the last week in April to the end of September to do any damage.

The prospects of the bushberry crop in the spring were not very bright. The canes were badly winter killed, even where they were well protected. Those that were left bore a good

crop, both of raspberries and blackberries. The woods were full of wild berries and more were picked than during the last five years. The strawberries wintered better than any of the others, and when they were in bloom we were almost sure of a big crop, but when picking time arrived, we were badly disappointed. It seemed they were not properly fertilized, and a very light crop was picked. Some did not even get a berry.

Not nearly as many new plants were set in '96 as in '95, and many a grower of small fruits feels discouraged. One man plowed up two acres of bushberries. Small fruit made its growth during the summer and in the fall seemed to be in good shape to stand the winter, with plenty of moisture in the soil. The drought of '95 and the dry winter of '96 was very severe in the orchard at blooming time. It seemed as if but little damage had been done, but four weeks later finds trees dried up from the smallest to the largest, in the orchard. Many were root killed and some that survived will be dug out in 1897. The Plumb Cider has stood it best in all orchards that I saw. Of all the young trees planted in the spring one half failed to grow. The blame was all put on the nursery-men, and I do not think they knew in what condition their trees were, and they sent them out in good faith; but very few trees were sold during the summer and fall. The apple crop was very good and every tree of bearing size bore fruit. The price started at 75 cents per bushel for early apples, and they soon sold down to 15 cents. The better keeping apples sold from 30 to 50 cents and crabs were so plenty that many rotted and it was hard work to sell at 15 cents per bushel. Blight was quite bad in many orchards, but insects did not do as much damage as in '95. Plums and cherries bore a heavy crop also and all nut bearing trees.

In the spring of '95 I bought a few small apple trees from A. J. Philips of West Salem, and they stood the dry season so well that I have said they are as tough as the woodchuck, and I was anxious to see Mr. Philips' place where they were raised, also to learn if he really practiced in top working what he preaches at Institutes and through the papers. So I went

to his place last fall, about the time when the Duchess apples are ripe. His orchard is about 6 miles north of West Salem on top of one of the highest bluffs, 12 miles east of the Mississippi river. I met one of his sons coming to town driving three horses abreast drawing a load of twenty barrels to be shipped to Minneapolis. I found Mr. Philips in the orchard superintending the picking of apples. He had one horse drawing a stone boat on which were three or four barrels of apples. It was a novel way to get them to the packing house without bruising. Two of his sons were busy in the cellar storing away Duchess apples, as nice a lot of 400 or 500 bushels as any one would wish to see. He was holding them for better prices.

His orchard and nursery must contain about twenty acres. His soil is clay with a flint gravel sub-soil and not very rich but well adapted to apple growing. The wind can strike his orchard from every side and the air always circulates, and this accounts for his orchard being so free from blight and insects. Some of his older trees showed the effects of the drought, but none of his younger ones.

His crop must have been from 1200 to 1500 bushels. In top work he is doing more than I had the faintest idea of, and doing a grand good work for the apple growers of Wisconsin. He had so many kinds that he experiments on with good success. He had one large top worked tree that bore three varieties, the Utter, Wolf River and McMahan which was a sight to see. It was all propped up and must have had 12 bushels on it. Along the road and division fences he has Whitney number 20 for fence posts that were all heavily loaded with fruit. His trees do not grow fast; that accounts for their hardiness. He has an experimental orchard that he can feel proud of. He may not live to reap the benefits of his work but his bright boys will if they stick to the business. I will long remember the pleasant afternoon I spent with him in his orchard.

REPORT OF WAUPUN HORTICULTURAL SOCIETY.

The Waupun Horticultural Society has been in existence since the 3rd of June, 1895. We now have eleven members as against four the first meeting. We have held sixteen meetings during that time, and as many subjects have been discussed.

At the annual meeting held Jan. 11th, 1897, the following officers were elected:

President—J. Gysbers.

Vice-President—D. Allan.

Secretary—W. M. Tichenor.

Treasurer—H. D. Meenk.

W. M. Tichenor, Secretary.

REPORT OF EAST FREEDOM SOCIETY.

The officers of the East Freedom Horticultural Society are as follows.

Herman Voll, president, North Freedom, Wisconsin.

Charles Schellenberger, vice-pres., North Freedom, Wis.

Albert Zochert, treasurer, North Freedom, Wisconsin.

Charles Hirschinger, secretary, Baraboo, Wisconsin.

This society has thirty-six members who represent thirty-six families and has a sufficient amount of money in the treasury to meet necessary expenses.

Charles Hirschinger.

P. S.—We have meetings alternately in private houses and school house. We had an interesting meeting last night at my house, and will have another meeting on Wednesday, Feb. 24, at the school house. We are anxiously waiting for our 1896 horticultural report.

Secretary.

OMRO HORTICULTURAL SOCIETY.

This society, at its annual meeting held January 5, 1897, elected the following officers for the ensuing year.

Vice-President—Thomas Tanner.

President—O. W. Babcock.

Treasurer—S. O. Pingry.

Secretary—Mrs. Jos. D. Trevelen.

Executive Committee—J. L. Fisk, L. F. Laiten, Mrs. R. T. Darrow and Mrs. Ellis Graves.

S. O. Pingry was elected as delegate to the annual meeting of the State Horticultural society, and Mrs. Jos. D. Trevelen alternate. This society now numbers sixty-six members and holds regular meetings each month. Its annual chrysanthemum shows are very attractive and interesting.

Mrs. Jos. D. Trevelen, Secretary.

OBSERVATIONS FOR 1896.

The spring opened in 1896 after the severe drought of 1895 quite as dry as the previous season. For a time farmers entertained fears of another drought but seasonable April showers checked the drought, and May 1st vegetation was in full leaf.

The apple trees were in bloom May 12th and many feared we might have the experience of '95, but we had no late frosts or so slight as to damage nothing. But May 15 we had a terrible wind which lasted twenty-four hours. The cherries were just in bloom and it stripped the blossoms so there was hardly any fruit. In three days' time the maple foliage looked as though scorched by flames and did not recover during the season.

What few strawberry beds the drought had spared, blossomed well, and then a mysterious something descended on them and blasted the blossoms so that people who expected hundreds of quarts did not have quarts even.

A drought in June injured the raspberry crop so that there was very few berries. We had many generous showers in July while August was quite droughty. But September was a good old-fashioned rainy September, with no damaging frost until the last of the month. The apple crop in Outagamie county was exceptionally abundant; everything bearing in the shape of an apple tree.

F. H. Wolcott, Appleton, Wisconsin.

WOOD COUNTY HORTICULTURAL SOCIETY.

In behalf of our society I would make the following report for the year past. Since the annual meeting in January, 1896, no meetings were held until January 30th, 1897, when a few members got together and held a meeting and talked over the failures of the past and promised to do better in the future. Owing to the small attendance, the election of officers was postponed until the February meeting. Your humble servant was elected as delegate to the state meeting where he did and said what he could to make a closer union between the local and state societies, without much results. At the February meeting which was held on the 27th, the following officers were elected:

President—George T. Rowland, Grand Rapids.

Vice President—John Coulthart, Centralia.

Secretary—L. H. Read, Grand Rapids.

Financial Secretary—Mrs. Kate Pippin, Grand Rapids.

Treasurer—Mrs. K. Miller, Grand Rapids.

Librarian—B. M. Vaughn, Grand Rapids.

A new constitution was adopted which, it is hoped, will help us in our work as it has several new features, one of which is the reduction of annual dues to 25 cents and of life membership to \$2.00. It also contemplated to publish, in some manner, the best of the papers and discussions at our meetings.

The delegate to the state meeting made a full report and

read copies of several of the best papers that were read at the Madison meeting.

Strong efforts will be made to build up a large membership, and regular monthly meetings will be held on the last Saturday of each month.

L. H. Read, Secretary.

FREMONT HORTICULTURAL SOCIETY.

Our annual meeting was held January 14, 1897. The unfavorable weather and rough traveling prevented a full attendance. Our show of fruit was slim as far as quantity was concerned, but its quality was very fine. One sample of Wolf River apples, exhibited by John Billington, was splendid. One apple measured fourteen inches "around the waist," in good condition. He had the Wealthy about as good as they raise.

We had a short discussion on strawberries. The members being unanimous in their preference for the Crescent fertilized by Capt. Jack, or the Wilson.

The following resolutions were offered by Mr. J. Wakefield and adopted:

By the death of our friend and co-laborer in the cause of horticulture, Mr. W. A. Springer, this society has lost one of its oldest and most earnest members, one whose long and persistent labors have done so much for the cause of horticulture in our town and county—Therefore,

Resolved—That it is proper for this society to honor and respect his memory by some fitting expression of our regard.

Resolved—That our sympathies are with his afflicted family in their bereavement, realizing how hard it is at all times to say "Thy will be done."

Resolved—That our secretary be requested to enter these resolutions at length upon our records.

The officers elected for the coming year, are:

President—C. F. Eaton.

Vice-President—Paul Scheisser.

Secretary—J. Wakefield.

Treasurer—Jacob Steiger.

Executive Committee—A. Randle, John Ploeger and John Ratsburg.

Delegate to state society—J. Wakefield.

We have about twenty members.

J. Wakefield, Secretary.

VERNON COUNTY HORTICULTURAL SOCIETY.

The Vernon County Horticultural Society met on the 5th of January for the election of its officers. The officers elected for the ensuing year, are as follows:

President—F. S. Barney.

Vice-President—I. S. Giffin.

Treasurer—C. V. Porter.

Secretary—J. R. Hall.

John R. Hall was elected delegate to the state society.

Strawberries were only a half crop on account of an insect or louse that destroyed the blossoms. Some fields were entirely ruined.

Raspberries did exceedingly well and there was no report of a failure at any place in our vicinity. Blackberries also did well. Currants and gooseberries were destroyed while in blossom, by the hot winds. Apples were an abundant crop and of excellent quality; no insect doing any damage to them.

J. R. Hall, Secretary.

THE DOOR COUNTY HORTICULTURAL SOCIETY.

Our annual meeting was held at Sturgeon Bay, January 2, 1897, at which meeting officers were elected for the following year as follows: George M. Tong, Sturgeon Bay, president; Carl Gullickson, Sturgeon Bay, vice-president; Hans Ern, Sawyer, secretary; Magnus Larson, Sawyer, treasurer, and I. L. Buchan, Sturgeon Bay, librarian.

We have not a very large society but expect to double our members before the end of the year. But if our society is small it is alive and is doing good work. A great interest is taken in fruit culture of all kinds so we have a large field to work in. We use the state horticultural reports as an incentive to join our society, and do not see how we could get along without them.

Respectfully submitted,
George M. Tong, President.

RUSHFORD HORTICULTURAL AND IMPROVEMENT SOCIETY, EUREKA, WISCONSIN.

Our line of work for the year past has been of a very active, interesting and instructive character and we are certain that the efforts put forth have been productive of good results in untried spheres in this community as inaugurated by our association.

We have held during the year, twenty meetings, in which we have had discussions of various topics bearing particularly upon the interests of horticulture, floriculture and agriculture, and we are assured that we have learned much by comparing efforts and experiences, both sad and successful, which knowledge if we had learned in time, would have saved us many weary struggles, heartaches and repinings.

Of the friendships and sociabilities evoked by our gatherings, they are too numerous to attempt to portray them. Sufficient to say they are a marked success.

The benefits derived from the transactions of the State Horticultural Society, which are placed in the homes of many families that never had access to them and which gives timely warning to avoid the pitfalls of dealers in sham fruits, and instructions of a varied and elevating nature are of so pronounced a character that a Solomon would imbibe wisdom and common sense from their perusal.

In connection with our work we have annual chrysanthemum

mum shows; not of that plant alone; but of all other articles which have free entries with premiums awarded for superiority. The presentation of flowers and plants was really surprising in variety, beauty and number. Our art, needlework and curio departments were interesting and attractive. The vegetable and grain exhibit was fine, but of apples, the especial branch of our society's work, were greatly in evidence for a section that does not plume itself on being particularly a fruit center, but where the failures have proved as certain to scores of varieties almost as if they were planted in the polar latitudes. We did ourselves proud.

We had one hundred and thirty heaped plates of extra specimens of Fameuse, N. W. Greenings, Perry Russet, Grimes' Golden, Walbridge, Wealthy, Pewaukee, McMahan's White, Borsdorf, Fall Orange, Wolf River, Talman, Swaar, Beitenheimer, Utter's Red, Ranet Red, Canada Red, Hass, Romanite, St. Lawrence, Blue Pearmain, Golden Russet, Ben Davis, Sweet Pear, Rome Beauty, and Black Russian; likewise there were twenty varieties of seedlings, some of them superior to the older varieties one sweet in particular called "Sweet Fameuse," and a sub-acid called "Bremers' Seedling."

Regarding seedlings, a line of our efforts is to bring out new sorts of merit. We have a committee to test new ones presented for examination, and if of meritorious character in quality, size, color and long keepers, we give liberal premiums, and we think by persisting in this course we will have something by and by to not only comfort our people, but to fill a long felt want.

We have an established Horticultural day in which speaking, music and banqueting figure. At our Horticultural day meeting last summer we were privileged with an address from the talented Vie H. Campbell. The society not only supplies its members with plants, but gives plants likewise to some 300 female school children of the town. We distributed \$50.00 worth of garden and flower seeds to the mem-

bers in the spring and all the Farmers' Bulletins issued by the government and reports from experimental stations of each state we secure for distribution.

We take the supervision of Farm Institutes held here as far as making provision for the same is concerned, and not the least among our entertainments is our annual "Strawberry Festival." We have recently inaugurated a plan to interest the farming community, viz., by placing upon a bulletin board the subject we will discuss at the coming meetings.

Such in brief is an outline of our work. Our membership is over 100 men who, with their wives, make a strong working society, in which the ladies take a very active part. Papers and recitations are presented by them and, being equal in all privileges, they always take an interested part in all matters connected with the society, and a large share of its success is due to their devotedness and untiring energy.

H. H. G. BRADT, R. S.

P. S. The officers elected for 1897 are:

Dr. T. E. Loope, President.

Mrs. Jennie Chappel, Vice President.

H. H. G. Bradt, Recording Secretary.

Mrs. M. L. Bradt, Assistant Secretary.

Mrs. M. E. Penrisman, Treasurer.

Executive Committee—Mrs. S. G. Floyd, Mrs. S. A. Rounds, Mrs. Clara Noble.

Delegate for winter session of State Horticultural Society for 1897, A. A. Parsons.

THE JANESVILLE HORTICULTURAL SOCIETY.

As the years pass our membership grows less. This year we have lost several from our ranks and others are growing old and lose interest in this work. A few, however, hold together and meet once in a while to talk over horticultural

matters. Our president, Geo. J. Kellogg, is as enthusiastic as ever and helps a good deal to keep matters before the people. We have now but fourteen life members left on our roll. The officers for 1897 are:

President, Geo. J. Kellogg.

Treasurer, Dr. J. B. Whiting.

Secretary, E. B. Heimstreet.

Delegates to Wisconsin State and other Horticultural Societies are: Geo. J. Kellogg, E. B. Heimstreet and Dr. O. P. Robinson. The reports of the State Horticultural Society are eagerly looked for each year, not only by the members, but by many who are interested in this work, and all copies sent here are placed where they do good.

E. B. Heimstreet, Secretary.

RIPON HORTICULTURAL SOCIETY, FOR THE YEAR 1896.

The annual meeting of this Society was held January 20, 1897, and following is a list of officers for the ensuing year:

President, Wm. T. Innis.

Vice President, B. F. Conant.

Treasurer, E. Woodruff.

Secretary, A. S. Crooker.

The members of this Society appreciate the value of the work being done by the State Horticultural Society in testing fruit trees, and feel that all fruit growers of the state will be greatly benefited thereby. The small fruit growers here have lost nearly all their blackberry plantations by reason by the severe drouths of the past three years. The Society numbers 41 members.

Very respectfully submitted,

A. S. Crooker, Secretary.

PROCEEDINGS OF THE GRAND CHUTE HORTICULTURAL SOCIETY AT THEIR APRIL MEETING, 1897.

The Grand Chute Horticultural Society met at the home of Mr. and Mrs. G. L. Finkle on Thursday, April 1, 1897. The pleasant day and settled roads brought out a large company of friends and members. Numbered among the guests were Rev. J. Davis and wife, and Rev. J. Irving and wife of Appleton, and Mr. Weston of Milwaukee. After a social hour the inner man was served to the satisfaction of all present.

The business meeting was then opened, and after reading the minutes of the previous meeting we listened to the report of Mrs. F. Wolcott, delegate to the state convention.

Mrs. J. Finkle read a paper entitled "Woman on the Farm," which portrayed the unappreciated Betsy, a veritable slave to husband and family, with no time for reading, rest, or recreation.

A suggestive paper, read by Mr. Grant on "Horticulture in Schools," urged the addition of horticulture to our school studies, claiming its influence inculcated in the mind of the growing boy or girl would develop in later years in the love of beautifying home and field with flowers and fruits. Mr. Davis gave a pleasant talk on the healthful surroundings of country homes, and believed we should have free delivery of the mails throughout rural districts.

A short item read by Mrs. Huntley described a Canada apple named Longevity, which was claimed to be wonderfully hardy. The tree was raised from seed, and still fruiting at the age of one hundred years. It is now being propagated by a firm in Nebraska.

A Minnesota correspondent denounces the Russian varieties of apples as unable to withstand the rigors of winter in that latitude, and thought the loss throughout the state had been very great from heavy plantings of those varieties. A discussion on the merits of different apples followed, and Mr. Huntley thought it unadvisable to experiment, leaving that for nurserymen, and planting only those that have proven hardy in this locality. Samples of Northwestern

Greenings, shown by Mr. Huntley, were in fine condition, and said to be wonderful keepers. Mr. Abbotts' Longfield apple trees bore the third year, and the fruit kept well until Christmas.

A talk on "Strawberry Culture" followed and Mr. Bounds recommended the Warfield, Wilson and Haverland as three reliable varieties to plant. In his opinion the leaf roller is the most formidable enemy the strawberry growers encounter. A novel method of raising this delicious berry, recommended to those possessing a limited garden spot, was explained by Mr. Buck. A barrel filled with rich soil, with perhaps 130 holes bored in the sides, and a strawberry plant firmly imbedded in each hole, with no greater care than liberal watering at fruiting time, was said to produce three or four bushels of fruit in one season.

The culture of cabbage and sugar beets was then discussed, and the best irrigation to apply, during a dry season, was said to be thorough cultivation.

The report of committee on membership was read and the plan for holding meetings at the homes of members, in regular routine, adopted.

The president said he had propagated a number of the Columbia raspberry plants and offered to give to the head of each family belonging to the Society a plant, if they will call at his home at proper time for setting. A few remarks from Rev. Irving were listened to with pleasure. He spoke of the apple as one of the first fruits as food for man and how the Scripture refers to horticulture all along down through the ages. Rev. Davis and wife were made honorary members of this Society.

Mrs. Davis and Mr. Perry were appointed essayists at our next meeting in July.

The officers chosen at the annual meeting last January were:

Mr. C. E. Abbott, President.

Mr. John Carey, Vice President.

Mr. J. P. Buck, Treasurer.

Mrs. G. L. Finkle, Secretary.

Mrs. G. L. Finkle, Secretary.

The following resolutions were offered by the secretary and passed unanimously:

Resolved, That the matter of continuing the publication of our monthly magazine, fixing the pay for printing and all compensation of the editors, be left with the executive committee.

Resolved, That the work of the secretary shall be outlined by the executive committee and the amount of his compensation shall be fixed by them for such work.

Resolved, That the local society matter of sending delegates and arranging for closer relations between the two societies also be left with said executive committee.

Resolved, That Prof. E. S. Goff be added to the executive committee so that he may be in attendance at these deliberations during this meeting.

Resolved, That any resolutions adopted by this society at any previous sessions, that conflict with the foregoing resolutions are hereby rescinded.

REPORT OF COMMITTEE ON RESOLUTIONS.

Resolved, That we continue the publication of the monthly magazine on such terms as the executive board may make with the printers.

Resolved, That Mrs. Franklin Johnson be the editor of the magazine at a salary which shall be fixed by the executive board.

Resolved, That we as a Horticultural society recognize the placing upon the program at each one of the "Farm Institutes" the fruit and vegetable question, presented by some successful grower, as one of the best means of furthering the interests of horticulture in Wisconsin.

Resolved, That the thanks of this society be extended to the "Farm Committee," and Superintendent McKerrow, for giving the fruit interests of the state so prominent a place in the Farmers' Institutes.

Resolved, That the thanks are due, and are hereby extend-

ed, to the chief clerk and Hon. Latta for placing a room at our disposal for this convention.

Resolved, That in the death of Wm. A. Springer this society has lost a valuable and honored member. While we shall miss his practical advice we shall cherish his memory, and highly appreciate the many efforts he has made to advance the cause of horticulture in this state, which are monuments to his life work, among which may be mentioned the Wolf River apple.

Resolved, That a copy of our Transactions, handsomely and appropriately bound, containing a portrait of Mr. Springer, be presented to his family.

Vie H. Campbell,
D. C. Converse,
A. L. Hatch,
Committee.

Madison, Wis., February 5, 1897.

Meeting of the executive board of the Wisconsin State Horticultural society held in the parlor of the Capital House, at 7:30 p. m.

President Kellogg in the chair.

The following resolutions were presented and adopted:

First. Resolved, That the salary of the editor of the Wisconsin Horticulturist be fixed at one hundred and fifty dollars (\$150) a year.

Second. Resolved, That W. J. Moyle act as business manager of said magazine for the ensuing year. He to receive as compensation for labor thus performed 25 per cent. of all fees received from advertising and 50 per cent. of all fees received from new subscriptions.

Third. Resolved, That the secretary's salary shall be fixed at three hundred dollars (\$300) a year, and the work the same as it was before the magazine was published.

Fourth. Resolved, That the secretary, Mr. A. J. Philips, be authorized to take charge of the trial orchard at Wausau,

he is to be paid for work in connection with same on the same terms he received in 1896.

Fifth. Resolved, That the state shall pay the expenses of a delegate to each local society once each year, and the local society shall select such delegate, providing such local society send a delegate to a meeting of the state society once each year at its own expense, and providing further, that the local society send their delegate first.

Sixth. Resolved, That the secretary's bill of one hundred and twenty-five dollars (\$125) for extra work on monthly magazine be allowed at one hundred dollars (\$100).

Adjourned.

W. J. Moyle,
Corresponding Secretary.

SUMMER MEETING

OF THE

Wisconsin State Horticultural Society.

Omro, Wis., June 23, 1897.

Wednesday A. M., 11:15.

Meeting called to order by the secretary, Mr. A. J. Phillips, of West Salem (owing to the absence of the President), and adjourned until 1:30 p. m.

Wednesday P. M.

President called meeting to order.

President—Before beginning our regular programme, I will appoint the committee on awards:

Fruits: Messrs. Coe, Smith and Babcock.

Vegetables: Messrs. Reed, Finkle, Stark.

President—The first thing on our programme for this afternoon, which was not taken up this morning, is the "Address of Welcome," by Doctor Ford of Omro.

Dr. Ford—Mr. President, Delegates of the Wisconsin State Horticultural Society, Ladies and Gentlemen:—I am very glad that a little authority in a petty office, has given me the opportunity in behalf of the local society and our villagers to extend to you a welcome to Omro. We are glad you have braved the difficulties of transit, especially from Rush Lake, to go to this remote place to hold your meeting. We are sorry we have not better weather to present to you. I am glad to welcome you because you all look so healthy; we do not want any sickly people to

come here. You all look as though you knew how to take care of yourselves, and as though horticulture was a health-giving occupation. Contact with nature and God's free, bright sunshine, and being brought in connection with fruits, flowers and vegetables, have tended to give you good blood, and I am impressed with the fact that horticulture is a pretty good thing. I want to welcome you principally because I think your society is doing a good deal of good work for this state. We all recognize the fact that whatever is good on this earth, makes it better for the people to live on this earth, makes the people healthier, makes them refined, makes them live longer, and we believe that horticulturists are making the earth better, and as such, we welcome you. We feel that your coming here will help our local society. I want to say that the work the local society has done is commendable. I will no longer take your time, than merely saying that while this town is small, and our conveniences are not very great, we do not want you to think that our welcome is limited. Our town is small but our welcome is certainly very great. I thank you again for coming. Applause.

President—Our secretary, Mr. Philips, will respond to the address of welcome.

Mr. Philips—Mr. President, Ladies and Gentlemen:—It may seem a little strange that I am put on the programme to respond to the address of welcome, but my wife says that I have the great fault of inviting myself. But the only sure way of getting on the program is putting yourself on there. That is the reason I am to respond to the address of welcome that the doctor has just given. I expected just such a welcome as we have received here. I have written a number of letters to members of our society asking them to come, and I told them that we would be received warmly and that there would be a good show. It is a hard place in which to put a doctor—to welcome us. Our village physician once said, "A doctor would starve to death if they all were horticulturists, as for fifteen years I got not a cent from Mr. Philips. I am glad that our people are not all horticultur-

ists." No business in the world affords as good health as horticulture. I have taught school, and I could pick out the children that ate much fruit. Much fruit—less meat—makes healthy children. You will notice that in Iowa and Minnesota, the horticulturists are a good class of healthy, temperate people, and good citizens. We consider the Omro society as one of the leading local societies of the state. We have reason to congratulate ourselves on the meeting we have to-day. We have with us the wife of our esteemed ex-president, Mrs. Smith, who has come here to attend this meeting. You are highly favored in having Mrs. Smith with you. We have here with us my friend, Mr. Wakefield. There is a man who rode two long nights in a stage coach with Abraham Lincoln, and such men are very scarce. We appreciate the welcome you have accorded us here. This is the fourth year I have been secretary of our society, and I have never seen at our summer meetings such a display as you have here. My friend Kellogg wrote me that everything had been killed by the frost. Does this look like it? We appreciate the welcome you have given us and wish to thank you for it.

President—The next on our program is a discussion on the advisability of having the business of the state society at its annual meeting done entirely by the executive committee and not interfere with the papers and discussions.

Deferred until the winter meeting of 1898.

President—The next topic on our program is "What I know of strawberries above the roots after twenty years' experience," George J. Kellogg, Janesville.

Mr. Kellogg—I have chosen the subject "Strawberries for 1897" instead of the subject as it was given.

STRAWBERRIES FOR 1897.

By George J. Kellogg, Janesville.

Mr. President, Ladies and Gentlemen:—The subject of strawberries includes soil, location, time and modes of planting, varieties, culture, insects, winter protection, spring treatment, picking, marketing, and last but not least, the best way of spending the money. While any of these sub-divisions would fill a volume and then the subject not be exhausted, it seems to me an hour's time now can be best spent, while we have so fine a show of fruit, by reports and discussions on varieties, both new and old.

We have had a cold, wet, frosty and backward spring, injuring strawberries, followed by severe drouth till the crop was badly crippled, then abundant rains. First strawberry bloom, May 8th; first blackberry bloom the 29th. Frosts May 16th, 35 degrees; 25th, 33 degrees; 26th, 33 degrees; 29th, 35 degrees; 31st, 31 degrees (ice); June 1st, 34 degrees; 7th, 35 degrees; 8th, 35 degrees. Now what varieties have passed through all these trials and paid, or paid best? Adding to the above the excessive heat of June 13th, 14th, 15th and 16th, with the thermometer 90 to 94 in the coolest shade, 135 in the sun, actually cooking even the green berries. From our notes and grounds the varieties that have paid best up to the 22nd are, in the order of ripening: Wood, Rio, Loudon No. 2, Wilson, Van Deman, Haverland, Cyclone, Warfield, Crescent, Lovett, Splendid, Bubach, Marshall, Bisel, Princess, Woolverton, Hoard, Saunders, Aroma, and Greenville. Crescent and Warfield did not give the usual early pickings because of frosts and drouth. The most promising after the 22nd are: Earle, Muskingum, Eureka, Eclipse, No Name, Enormous, Leader, Enhance, and Timbrell.

For quality plant Jessie, Hoard, Marshall, Aroma, Princess, Timbrell, Warfield, Bubach, Woolverton, Earle, Splendid and Shuckless (Mt. Vernon). For continued trial Marshall, Clyde, Enormous, Brandywine, Mary, Glen

Mary, Timbrell, Wm. Belt, Guick, Loudon No. 2, Winnebago Chief and Margaret.

The utter failure of Wm. Belt, Brandywine, and Clyde in '97 is a wonderful disappointment; Clyde bloomed so early it was almost used up by frosts; Brandywine and Wm. Belt do not show productiveness, and except some late show they are this season worthless. I do not see how Clyde could have matured one-tenth of the fruit from the bloom it gave. For our pocket-book's sake on our grounds for fruit we shall discard Annie Laurie, Brunette, Bouncer, Beverly, Ed. Queen, Epping (Y. D.), Gandy, Husey, Ivanhoe, Lady Thompson, Michels, Murray, Phillips, Princeton Chief, Robinson, Smith, Stayman's No. 1, Sunnyside, Sharpless, Salzer's Earliest, Shuster's Gem, Tenn. Prolific, Thompson's Earliest, Van Deman, Wilson and Weston. Of 103 blossoms counted of Van Deman only five berries matured. Aroma was injured by frost, but for firmness, size, and quality everyone should try it. Shuckless, Muskingum, and Cyclone will shuck in picking and that much can be said in their favor for family use; if grown for market they should be stem-nipped in picking. For big berries plant Marshall, Bubach, Clyde, Mary, Enormous, Edith and Glen Mary. Shuckless only for quality and novelty—no money in it, except the sale of plants; as I said last year, a "humbug."

For dollars, plant for perfects, Splendid, Lovett, Wood, Earle, Wolverton, Muskingum, Enhance and Cyclone for early, and "No Name" for late, and for pistillates, Warfield, Haverland, Crescent, Greenville, Bubach, Eclipse, Princess, Bisel and Eureka. Rio for early has done better this year than ever before but it is doubtful if it is worth saving.

No report from anyone is reliable, except comparative, and corroborated by others on different soils and locations. No two seasons are alike; no two beds or fields are alike; one side of our five acre patch, while it all looks just alike, is entirely different with the same variety. No twenty-five plants are enough to test a variety, and four years' faithful trial is little enough to draw conclusions on any variety that has a

reputation such as Marshall, Clyde and Brandywine. We have Marshall and Brandywine in fruit rows forty rods long, and yet we can form no definite conclusions. Our fruit on exhibition is all from matted rows, and grown only as we grow it for market.

President—We will now give some time to the discussion of this paper. It is a subject that most of us are interested in, and we can get information from Mr. Kellogg other than is given in his paper. Now if there are any questions, we will be pleased to hear from any of the members. All feel free to take part in these discussions as they form a valuable part of our meeting.

Sec'y Philips—If you were to select out of that list three varieties for the farmer, what would they be?

Mr. Kellogg—I would take Splendid first and Warfield second, and if I could have only three varieties I would say Marshall and Bubach.

Sec'y Philips—Is the Bubach the berry you take to market in a wheelbarrow?

Mr. Kellogg—I think it must have been.

Mr. Herbst—Mr. Kellogg, would you advise planting the Enhance and Splendid together?

Mr. Kellogg—The Enhance is a little later in bloom, but I found no great difference. The Enhance is objectionable in time of drought. It is standard and I cannot discard it.

Mrs. Johnson—I heard Mr. Tuttle say that the Enhance was the only one he could save.

Mr. Reed—I wish to say that in our part of the state, we want a berry that is late, that will not bloom until it stops freezing. We have no ripe berries yet. We must have a late berry as we know that the late berry has the most dollars and cents in it. We have been having strawberries from Illinois and Michigan for a month.

Mr. Kellogg—For late varieties I would suggest Earle, Timbrell, Enhance, Enormous and Gandy.

Gentleman from Omro—Is not the Gandy a soft berry?

Mr. Kellogg—No. No person is perfect, no berry is perfect.

Mr. Herbst—I thought you discarded it.

Sec'y Philips—What is a good point of a berry that does not bear?

Mr. Kellogg—You do not have to pick it.

Mr. Smith—What varieties do you advise setting with the Warfield as a fertilizer?

Mr. Kellogg—Wood is earliest. The Wood has done well with me. It is not as large this year. The Lovett is early enough; Splendid is early also. There you have the three.

Sec'y Philips—Which is the best?

Mr. Kellogg—I cannot tell.

Mr. Smith—Is the Wood the same as the Beader Wood?

Mr. Kellogg—Yes.

Mr. Herbst—In regard to the fertilizer for the Warfield, you cannot find any one fertilizer that will do for a field of Warfields. There are early and late Warfield blooms, and we have better results by having plenty of varieties from the staminate class.

Mr. Kellogg—Every variety is in bloom about three weeks, and during that time you catch the early and late bloom. We set two and two. We do not set three and five. We plant two and two, and as many perfects as pistillates.

Mr. Herbst—Is not the Warfield longer in blossom than the staminate?

Mr. Kellogg—We find late Warfields.

Mr. Herbst—When I first got up that Sparta, I suppose it was got for the Warfield, but I find that this year they are far in advance of the Warfield. They were in blossom before the Warfields.

Mr. Smith—You speak of some varieties being caught with the frost. Were the leaf stems too short for the fruit stems?

Mr. Kellogg—There are certain kinds that shove the blossom above the foliage. These kinds are apt to be hurt

worse. I have known the Shuckless and Jessie to kill before they open. Some will stand the heavy frost and still recover. I cannot understand it.

Mr. Reed—This question of names—I want to go on record as protesting against this cutting and slashing of names of our vegetables and fruits. I think that any of the ladies present will agree with me that if they give their children names, they do not want them given any nicknames. I want to protest against this slaughtering of names. This strawberry named the Parker Earl, named after one of the greatest American horticulturists. This cutting of names is an insult to these noble men whose names they bear. Perhaps it would be better to give some shorter names, but after a fruit is once named, let us call it by its name. It is just as well to call it Parker as it is to call it Earl, so why not call it Parker Earl?

Sec'y Philips—This is just what the Pomological Society at Washington recommends. They say cut your names down. It is recommended by that department to all societies, to be as brief as possible.

Mr. Herbst—I think I can explain our object to Mr. Reed. It is to cut off space. We can get two varieties and get another premium.

Mr. Perriam—The whole of this business of cutting down of names, originated in the American Pomological Society. I think first in their meeting at Rochester some 25 years ago. All of our pears had French names. Some of them took nearly two lines of newspaper to print. It takes 5, 6 and 7 lines to inscribe the name of a certain child of a sovereign of Europe. We now call the Beader Wood, the Wood, as Beader is only a handle to the name. We have not only come down to one name, but as short a name as possible.

Mr. Smith—I want to say that so many of the members speak of the staminate varieties of the pistillate. I want to ask if anybody ever saw a perfect flowering plant without being a pistillate.

Mr. Coe—A short time ago the question was asked, what are the names of the three best strawberries. Now I would

like to ask this same question of every strawberry grower present. In getting the answers from the different growers, we may get something that will give us the three best strawberries. I would like to ask them all what are the three varieties that have done best with them.

President—Very good suggestion. I would be pleased to hear from some of the growers of Omro.

Mr. Parmer—The Enhance and Crescent are doing the best, also have good success with the Wilson.

President—What is your soil?

Mr. Parmer—A heavy clay.

President—That is why the Wilson is doing well.

Mr. Smith—Warfield and Bearer Wood, staminate, and Wilson as fertilizer are best with us.

President—I would state that my soil in Ripon is a prairie loam, and the Wilson is almost an entire failure. It does well in a clay in the same locality.

Mr. Coe called for.

Mr. Coe—The three varieties are Warfield, Bearer Wood and Haverland.

L. G. Kellogg called for.

Mr. L. G. Kellogg—The best perfect flowering variety is the Bearer Wood, next Enhance, and for commercial purposes, the Warfield.

Sec'y Philips—I would say Sparta, Warfield and Haverland. The best plantation I have seen this season is 10 acres of Warfield and Bearer Wood, alternate rows.

Mr. Pingree called for. Said to be a large grower.

Mr. Pingree of Omro—This is a mistake. I raise about one case of berries each year. I have had the best luck with the Manchester. Some list it as a pistillate and some as a perfect,

Mr. Herbst of Sparta called for.

Mr. Herbst—I would rather hear from Mr. Kellogg. I will name as the three, Warfield, Sparta and Bearer Wood.

Mr. Treleven called for.

Mrs. Treleven responds—When it comes down to dollars

and cents, the Wilson and the Crescent, but the Parker Earl and Warfield do well with us. Those four are the best on our soil.

Mrs. Johnson—Mr. Johnson makes more money out of Crescents. It has been long since we have had a crop of berries.

Mr. Hinkle—I will speak for Mr. Humphreys. I saw him Monday and asked him to bring some berries here. I asked him which were doing the best, and he said the Haverland, Warfield and Bubach are doing the best this year. He placed some here on exhibition.

Mr. Smith—Some people have spoken of a big crop. What is a big crop? I might say that we have picked 594 and 595 cases off an acre of Warfields and I think they were fertilized with Wilsons. This is not the largest we have had.

President—Sixteen or 24 quart cases?

Mr. Smith—Sixteen quart cases.

Mr. Kellogg—Now they asked me for the best one variety. Now I have not given you the best three. What do you want them for, for family use, home market or for shipping? It depends entirely for what you want them.

Mr. Philips—I meant for the home first, for the small grower. For the home first so the children can have some.

Mr. Kellogg—I cannot put in three, I must have one more, I must have five.

Mr. Herbst—Please name one.

Mr. Kellogg—Splendid is my choice. If I could have but two, I would have the Warfield.

Mr. Herbst—Your next?

Mr. Kellogg—There is the Crescent and Warfield, I can not skip the Wood, Crescent or Haverland, and then if you must have big berries to go with the wheelbarrow, you must have these two varieties. I must have the five kinds for home use or market. For the best three varieties for neglect by the farmer, Wood, Crescent and Warfield.

Mrs. Johnson—Several times people have come to Mr. Johnson and asked him for berries for the home garden, and I remember Mr. Johnson giving them Bader Wood, Crescent

and Haverland,—Beader Wood for fertilizer, Crescent to bear, and Haverland because it is a good berry.

Mr. Perriam—The question comes up every year. Which is the best strawberry? And then the experiences of the various persons. You never will get anything out of it until the time comes. There are two questions relative to raising strawberries. It does well in a hard soil, a firm soil. You cannot raise them upon our fluffy prairie of central Illinois. They will not stick to the ground. The roots will lie on the ground. We hear that the Wilson and the Crescent are respectable everywhere. The best soil for berries is along the edges of woods, which is a light loam; a sandy loam. Every man must experiment for himself with the varieties that he chooses, and finally he will find the strawberry that does best with him. It may not do well with his next neighbor. We must experiment with several in order to get the best for garden and family use. We must come down to that, and we are beginning to come down to that. We must work by induction. The Wilson and the Crescent are the two best strawberries.

Mrs. Smith—Haverland and Warfield. A good many years ago when my son was young, we picked from a quarter of an acre 100 bushels of Wilsons.

President—In regard to a large crop. We would be pleased to hear from any grower present.

Mr. Abbott—We picked 900 quarts from 17 rods of ground. What variety? Crescent and Wilsons. 900 boxes and gave some away.

President—Is there anything further on this question of strawberries? Before we pass this topic, I would like to ask Mr. Kellogg's experience with the Brandywine this season.

Mr. Kellogg—I spoke of this in my paper, perhaps I went too hurriedly. It has only been two years since it has been on the market. We planted largely last year. We have two rows 40 rods long. I have strong faith in the Brandywine. The Enormous is another berry that is showing large, and a lot of fruit on it. You cannot draw any conclusions until you have about four years' time.

Mrs. Treleven —Anybody have the Hersey?

Mr. Kellogg—I have that variety on exhibition.

Mrs. Treleven—Anybody have the Hersey?
be able to report in another year.

Mr. Kellogg—It is about a mid-season. I have a plate on exhibition, and will answer any questions later.

Mrs. Johnson—Has anyone fruited the William Belt?

Mr. Herbst—We have.

Mrs. Johnson—What is your experience?

Mr. Herbst—Not very good.

President—Is there anything further before we pass this topic?

Mr. Reed—I would like to ask Mr. Kellogg if he does not mean in the summing up of what he has said, would you speak of a variety if it has not done well?

Mr. Kellogg—Go back on a variety if it goes back on you. Your ground may be peculiar, but if it doesn't agree with you, do not keep the berry. Try some good kinds. Everybody likes the Warfield. Do not plant Warfields alone, you will get nothing if you do.

President—The next topic on our program, "What We Can Do for Our Homes," by Mrs. Daniel Huntley of Appleton.

OUR HOMES AND WHAT WE CAN DO FOR THEM.

By Mrs. D. Huntley, Appleton.

There is no calling which men and women pursue that is so directly devoted to making a home as that of the horticulturist. While the effort of every good government is to make better homes for its people, and every scientific inventor and instructor is searching to add some luxury or comfort to the home, it is the special work of the horticulturist "to dress and to keep the earth," and to bring from its bosom things pleasant to the sight and good for food for the millions who dwell therein, and while doing this there should be a continual effort to select from the excellent things

which have grown under his hand, the finest trees, the choicest fruits, and fairest flowers to adorn his dwelling-place.

Few things are more attractive to the traveler in any country than the homes of the people that are scattered over the hillsides and valleys, surrounded by growing crops, and fruitful orchards, and embowered with vines and brightened with sweet flowers. Often when riding over our country roads, we see a home that is a vision of beauty, we know at a glance that there is a home of culture and refinement where one would delight to dwell. Again we pass a dwelling where nothing has been done to add beauty to the landscape, where no tree lends its grateful shade or no sweet flower its fragrance, and though it be the home of wealth, it sends a chill through every nerve to think of spending a life time in such a desolate place.

We have in mind the home of an eastern farmer, said to be worth forty thousand dollars, who built a handsome brick house in a meadow, fifty or sixty rods from the road, without one living, growing thing around it, except the green grass and a small vegetable garden and there he lived and died, never missing the beautiful things and the excellent things that might have grown around his costly dwelling. With all his wealth he did nothing to adorn his home with tree or flower; did nothing to cultivate in his children a love for the beautiful in nature. Who would not prefer a smaller fortune and a smaller house surrounded by trees and adorned with flowers of the garden and fruits of the orchard, to such a barren home.

We know of two Wisconsin farms which present the most marked contrast of any adjoining homes we have ever seen. On one of these, the owner has lived thirty years. The house is very small, without porch or shed. It stands in a field, ten or fifteen rods from the road without one tree or shrub around it. The out-buildings are small and poor and indicate plainly the character of the owner.

The other home where the owner has lived but fifteen years, is a model of neatness and thrift. The house, though

small, is neatly painted, and has a commodious kitchen attached. The windows are filled with blooming plants, the lawn is dotted with flower beds, shade trees and fruit trees are all planted in appropriate places, and many of them are now in full bearing; and an excellent garden of vegetables and berries supply the table.

The farm buildings are large and filled with abundant crops, the latest farm machinery is used and everything about the place is attractive and pleasant.

The difference in these homes is not caused by climate, by soil, or rainfall, or distance from market, but it exists in the owners themselves. Both of these men have good health; both have the same number of acres and both have had precisely the same number in the family.

The one has done excellent work, the other has done comparatively nothing. As life is what we make it, so our homes are what we make them.

When we think of this fact and look over the homes where we have lived fifteen, twenty and thirty years, we realize one of two things: either that long ago we made some effort, perhaps, what then seemed some great sacrifice, to make our homes attractive, or else we constantly regret that we did not commence this good work in earlier years.

It is said that the Swiss people have a law which requires every newly married couple to plant trees around their dwelling. If this was done in our state, new homes would spring into existence with trees as fair and flowers as sweet as life in love's young morning.

One great mistake which people make who begin their home making on a new farm, or on an old one, is in delaying tree-planting and flower-growing till the new house is finished; they are not quite certain about the building spot; they do not know where they would like this or that tree, or the shrubbery, or the rose bushes, or flower border, so they wait and the years slip away; little or nothing has been done to adorn the home and by-and-by the new house will stand bleak and bare with none of the beauties of nature around it. I know of farmers who have done this very thing—it is

a loss which time cannot soon repair. The new house on the old farm should be shaded by magnificent trees, grand old shrubbery, and sweet roses; and beautiful flowers should surround it and climbing vines caress it. These are the things which wealth cannot purchase and transplant in a day or a year. Another mistake is in thinking we are too old to plant fruit trees. I have a venerable neighbor over eighty years old, who retired from his farm to a new place of five acres nearer the city. As soon as his house was built, he began to plant trees and shrubbery, and every year since he has added some new or choice variety of fruit or flowers and now he has apples, grapes and berries in abundance for a small family. He has also many flowers, a large plot of roses which are admiration of all who pass his door; and the present spring he has added seven new varieties to his collection. Not long since, while talking of fruit with the writer, he said, "When I came into this world I found apples growing here, and when I leave it I am going to leave apple trees of my own planting."

Another mistake is neglecting to plant trees because the home is a transient one. Where ever we live, if only for a single year, we should plant some fruitful or ornamental trees, and some sweet flowers to brighten other lives and make the home more beautiful for others than when we found it. "We shall pass through this world but once, if there is any good thing we can do for a fellow being, let us do it now, for we shall not pass this way again."

Another mistake is in allowing children to grow up in homes where no fruit is seen or flower is grown. Children love beautiful things; they are fond of flowers, they are delighted with fruits; they like to play in sunny fields and shady nooks, and have a tree or garden all their own. Cherish this love of the beautiful in their growing years—it will be a safeguard from evil even down to old age.

But whatever we have or have not done for our homes in the past, we know this fact—it is never too late to begin a good work; the present thought is what we can do now? If we have only a few trees and a few flowers about our homes, let us begin

at once to add something that is new or something that is old that we have long desired, or something of the kinds we already have. Fill up the waste places and the corners of the back yard with some hardy annual plant. A few trees each year and soon there will be a beautiful park in which to dwell.

There is no small investment that gives such large returns as when we purchase some of nature's living, growing things. We buy a tree for ten or fifteen cents, it grows well with little care and soon we can sit under its branches, we can eat of its fruit, it waves its lovely green banners in the breezes, we see it from afar as we hasten homeward, the children are playing in its shade, it is the tree that we planted. We have helped to make the earth beautiful. We buy a slender vine for a few cents and soon it wreaths the porch with its green leaves and we sit at evening within the bower it has made. We purchase a packet of seeds for a dime and, lo! they expand into a carpet of purple and gold, and this is but a tithe of what can be done with the treasures of the floral world. Little by little others can be added without neglecting any necessary work, in fact, more will be done because the pleasure they bring will be an incentive to greater exertion.

If we have no money for large investments, we can make our home attractive with the labor of our hands. The forest abounds with trees most excellent for planting, the graceful elms, the maples, the white pine and the hickory, some of which nearly equal the famous magnolia of the south.

The best of vines can also be found in our fields and woods. The clematis, the ivy, the bittersweet and the honeysuckle can not be excelled; if you have them not, find where they grow this summer and another spring go to the woods and transplant them to your lawn and your porch. You can not make your home attractive without the green and growing things of nature. The time has come when people will not be satisfied without green leaves and trees and flowers, flowers for the garden, flowers for decoration, flowers for every party and every feast. Again if we have not all the fruits in our garden that will ripen in our climate let us hasten to plant

them now, the small fruit grows so quickly and brings both health and happiness to the household. Surely every farmer should have strawberries, raspberries and grapes in abundance for his family. But says one: "It will not pay, trees will die, fruit will blight or freeze, we can buy berries cheaper than we can raise them." These good people know nothing of the joy of sitting under one's own vine and fruit tree they know nothing of the delight of watching the growing plants, and budding flowers and ripening fruits. They have never felt the pleasure of one horticulturist who said "to watch the growth of my garden is worth to me about ten dollars a day." It is love for this work that makes it delightful. There is nothing truer than that of which we all have read, that "Love is the greatest thing in the world." Nothing succeeds without it, flowers do not flourish without love; children do not prosper without love, homes are desolate without it. We ourselves cannot be happy without love; "if we have all else and have not love 'tis naught, for love is all we want." In every calling the essential element of success is love for the work, the lack of this is the main cause of the slow growth of our horticultural societies, both local and state.

Those who have inherited a love for the beautiful in nature will overcome all difficulties to make their homes attractive with the fruits and flowers of the garden. They have sacred memories of the home of childhood, of some sweet flowers the mother grew by the door, or the trees the father planted, of the first apples they gathered, of the earliest berries that grew on the hillside, and wherever they dwell these precious memories will give direction to their life work.

There is no class of workers who have more aid from the press and the people than the horticulturists of today. The pioneers of our state have labored unceasingly for more than two score years to make permanent and beautiful homes and to gather from afar the choicest of that best of fruits, the apple, and have grown it in such abundance that all who wish may purchase for a few cents the finest variety for the garden and orchard. I sometimes fear that we do not appreciate the efforts of the nurserymen and gardeners of our state; no

one knows except by experience the difficulties, the disappointments, the failures they have overcome to win the success they have attained.

Many of these veterans of horticulture have finished their life work and left fruitful orchards and excellent gardens as object lessons for the coming generations. We have delightful memories of the late President Smith, of the instruction of Peffer, of the experiments of Freeborn, and the example of Wilcox. If we profit by their teaching and gather around our dwelling places the best of earth's fruits and flowers, we shall add beauty to the landscape, joy to the household and blessings to our children; then to our guests from other lands, we can say, with delight, this is our country, these are our people, and here are their homes.

Sec'y Philips—There is one thought that Mrs. Huntley brought out that impressed me with its importance. I think of it very often, and that is "Do we as horticulturists, feeling the importance of horticulture, in our state, do we think of the men who began this work, do we respect them as we ought to." I think of that many times. Here was Uncle Springer, a man who would not sell a flower or an apple tree, but gave them away and if any one wanted to see his fruits, he would leave his work and show them. There was Uncle Peffer who had a national reputation. My old friend Wilcox, a better man never lived. When I purchased my first trees of him he wanted me to take some top worked trees. I thought I knew it all then. He said I will convince you that I am right. I believe in top working trees. I am going to sell you these trees on their own roots, and make you a present of the top worked trees. I took them home. I think of him every day when I go into my orchard. The trees that I gave him 20c for on their own roots are all gone, and the top worked trees he gave me are bearing good fruit. I wish the old man could come back and see them. I would apologize to him. Think of what President Smith did for us. He left his work to work for the horticulturists. I was glad Mrs. Huntley spoke of these men. Then there is that old man Giddeon. He has done more for northwestern horticulture than any other man

in Minnesota. The old man is living there all alone now and planting seeds every day. Here is uncle Zettle up in Sturgeon Bay. He has one of the finest orchards in the state. When I called on him some time ago, he said "I am glad you came to see me. You are the first officer of the state society that ever did come. My health is poor, and I do not think I will live much longer." He gave me an apple to eat and then planted the seeds afterwards. Then there is Mr. Tuttle, a man 82 years old, who is as earnest as a man of 20. There is one thing we must do for these old men, we must invite them. Mr. Tuttle exhibited 50 varieties of apples at the last state fair. I am very glad to see Mrs. Smith with us. I would like to see Mrs. Peffer with us too.

President—The next topic on our program is "The Wisconsin Horticultural Magazine." What can the horticulturists do to make it a success? Wm. Toole of Baraboo.

Mrs. Johnson reads paper for Mr. Toole.

THE WISCONSIN HORTICULTURIST. WHAT CAN THE HORTICULTURISTS DO TO MAKE IT A SUCCESS?

By William Toole, Baraboo.

The subject for consideration is presented on the program as a question, and it will be the aim of this paper to offer thoughts for discussion, which may lead to definite conclusions in regard to the way in which we may best promote the success of our magazine, rather than to give a direct answer to the inquiry.

With so much horticultural literature in the country, we may well ask ourselves if there is any need for an additional horticultural magazine, and if it is a necessity in what respect shall it differ from others, that it may supply our needs; also how shall we as members of the horticultural fraternity of Wisconsin help each, as best we can, to make our magazine

equal our ideal of what a Wisconsin horticultural journal should be.

The time is so long ago that our older members can scarcely remember just when we first talked of issuing horticultural bulletins at regular intervals as a means of timely communication on subjects of vital and immediate interest to the members. As time passed on the example of the Minnesota Horticultural society seemed like direct confirmation of the wisdom of our desire, and we were encouraged to venture a magazine of our own, but experience has shown us that our necessities are peculiar to our location, and that we should not be exact imitators of the horticultural journalism of the Union or of any particular state.

First of all we want in our magazine a timely presentation of the resolutions, papers and discussions of our state society's meetings, and to that end it should be a requirement that whoever may be our horticultural editor shall attend the two principal meetings to take notes and catch the inspiration of our society's spirit; the expense of such attendance to be paid by the society, whether the editor has a place on the program or not.

The development of Wisconsin's horticultural resources should be a leading thought, and local patriotism should induce each to acquaint the world through our paper with the possibilities and achievement of their respective localities.

A review of market prices, shipment of products, both where from and where to, as well as knowledge of the best distributing centers for our fruits, would be helpful to our better planning for another season's marketing.

We need scarcely mention here, but we certainly should not forget to contribute, our knowledge of new varieties, better cultural management, fighting insects and contagious diseases, discussion of legislative matters, etc.

Always a necessity to us is more knowledge of hardiness, adaptation and protection against climatic injuries.

We should each make a study of our state's horticultural needs and be prompt to write for our paper, not so much what we like as what is needed.

Questions should be asked and answered and any query that interests one will surely in its answer be valuable to many.

We must remember at all times that our editor is engaged to do editorial work and not as an author, and it is our duty to see that material for arranging is furnished, for we would be dissatisfied if all that appears should be from the pen of one writer, and if we must depend on what is going the rounds of other papers, there is no need for ours; but I will venture to say that if through indifference or faint-heartedness, we should allow our paper to lapse, it will be revived again as soon as there shall be energy enough in the society to give it the needed support. If we have faith in our undertaking, we must prove our faith by our works, and having produced a paper worthy of our intention, it will still be of little value if it is not read, and we should see that all within reach of our influence may have of its worth.

If our paper is worth more than it costs, we may well be content; but hopefully we think it may yet more than pay its way, but not until so many persons appreciate its value that the number of its subscribers make it valuable as an advertising medium.

President—Are there any questions or suggestions relative to our horticultural magazine?

Mr. Kellogg—There ought to be ten persons here who would give 50 cents for this magazine. I suggested last winter that we have a better paper and we ought to have things published in that magazine by which we can profit.

Mrs. Johnson—I have brought 100 sample copies with me.

President—Any further questions relative to this magazine?

Mrs. Johnson—I would like to say one thing. There are some discouraging features connected with the magazine. I met one of the members of the society not long ago, and he found fault with the magazine. He said the magazine was not as large as it ought to be. I said "Did you not think that was a fine article from Mr. Stickney?" He said, "Did you

have an article from Mr. Stickney?" I said, "Was not that a fine picture of Mr. Plumb?" He said, "Had you a picture of Mr. Plumb?" This is discouraging when one takes pains. Perhaps if all would read it, they would find it interesting.

Mr. Philips—As we are through with the program, I wish to say something to the ladies and gentlemen, particularly the men.

I have done something this year that I never did before in my life. We are getting our trees in too thick. There are some fellows going through the state from Ohio, selling apple trees. He stated that all of Mr. Philips' apple trees are black-hearted. I had to cut out about 50 of my trees as they are too thick, and I have sections here. I wanted to show them to Prof. Goff to see how the wood was after they were large enough to bear. I have some N. W. Greenings, McMahan, Eureka, Virginia and Avista. I have cut sections of the wood and anyone is welcome to examine them. Will also be pleased to answer any questions I can. About two years ago an old gentleman came to me and said, "You advocate top working. It is not a good thing. Your tree will be weak in the union." I did not care to sacrifice my trees to show him that such was not the case. I had a Malinda that was top worked. I cut one the other day, above and below where it was put together. You will see there is the Virginia wood and Malinda wood. If you wish to see the union, you can step up and look at this. Here is a McMahan (referring to section) that is as sound as boxwood. No blemish on it. It was crowding another one and I cut it out.

Mr. Kellogg—Will there be any time to take up the subject of raspberries?

President—Our topics are exhausted, and we will try to conform to the pleasure of the meeting.

President—Before proceeding I would like to make one suggestion in regard to a proposition made by the Northwestern Agriculturist of St. Paul. \$2.00 is offered for a copy of our report. The subscription price of their paper is \$1.00 I believe, per year. This may be an additional inducement

to the young people to write a report. This offer is made in addition to our offer.

Mr. Kellogg—What are the three best currants?

Mr. Floyd called for.

Mr. Floyd—I am not well posted on currants. I am experimenting some with them, but I have not paid special attention to the cultivation of currants. We have 12 different varieties of gooseberries, and I am trying to find which is the best and most profitable. I think two of the best are the White Smith and the Queen. The Queen is as large as any. The Downing does not begin to come up to the White Smith or to the Queen. It is a very healthy plant, quite productive but not as good in quality as the White Smith. I have some Smiths here. I have only five varieties here. I have the Red Jacket.

Mr. Herbst—Is it as good as the Downing?

Mr. Floyd—Yes. The White Smith, the Downing and the Queen are just as healthy plants as one can find. I have fruited the Queen two years.

Mr. Kellogg—Where did the Queen originate?

Mr. Floyd—In England, I believe.

President called for.

President—I am no authority on the Queen. It is a gooseberry sent out by Mr. Hennesey of Fond du Lac. I do not know whether it is a foreign berry or an American berry.

Mr. Herbst called for.

Mr. Herbst—I have been growing the Queen for four years. It has done very nicely up to last winter, but it has winter killed.

Mr. Floyd—The only fault I can find with the White Smith is that it overbears, the bushes break down with the fruit. Those I have here are two-thirds grown. (Referring to his exhibit, Mr. Floyd continues:) This is the Golden Prolific. It grows about the size of the Queen, and this is the Industry. The plant is not near as healthy and strong as the others. This is the White Smith.

Mr. Kellogg—That illustration of the gooseberry by Mr. Floyd is worth my whole trip from Janesville here. The In-

dustry gooseberry has been talked about for the last 10 years down east. Grows well along the lake shore where it is foggy, but it is too tender, it don't bear, the bushes are dead with us on the prairie. The Queen may do well for several seasons, then we may get a season that will wipe it out entirely. We know that the American types or Downing is a success and we cannot find anything better. The Columbus is coming to the front rapidly and is healthy and productive. The Red Jacket is a very good gooseberry. It is better in quality than the Queen, and upon my grounds has proven as hardy as the Queen. The Pearl is the same quality as the Downing. Seedling origin. It is a little larger than the Downing.

Mr. Kellogg—What are the three best varieties of currants, Mr. President?

President—Upon my grounds and for commercial purposes, Victoria, first; Long Bunch Holland, second; White grape, third. Prince Albert is also good.

Mr. Coe—I would like to say that it will not pay to plant the Golden Prolific. The bush will fail when it gets older.

Mr. Kellogg—It is hard to get a real White currant. I believe only about one-third could be guaranteed as such. There are so many that are called White Grape but are simply White Dutch. There is not the market for the White as for the Red currant.

Mrs. Treleven—I would like to ask if anyone has had any experience with the Versailles currant?

Mr. Kellogg—I have grown it for some years. I think there are three or four varieties that are better. The Victoria is the best red; Long Bunch Holland best late red. It is not as red as the Victoria, but it is the best late currant.

Mr. Smith—We do not multiply varieties; we subtract. We have the Long Bunch Holland and Prince Albert. We have four acres pretty near equally divided. Some one remarked that they were perhaps nearly identical, but if any one would come into our plantation and see them, they would not make such a remark. Perhaps we have not the true

varieties. They are very different. The bush of the Holland grows stronger, higher, with fewer side branches; the small twigs are the size of a slate pencil. Our four old canes of the Long Branch Holland are almost 6 feet high. The Prince Albert will seldom grow over 4 1-2 feet high. The Holland will stand from 1 to 1 1-2 feet higher over the field than the Prince Albert. I hardly know which is the best. The Holland have a little more fruit on than the Prince Albert. Mr Kellogg says the Holland is not red; with us it is very red. With us they are sometimes called leather skin. They are a remarkably good shipper. The Prince Albert will bring the most on the market because they are larger and show less of the string. We ship in cases, the same as the strawberries, and find that is the best way to ship. We shipped as far out as Colorado by express without any difficulty. In regard to the matter of our original planting, we had two or three dozen from which we propagated. When they got into bearing they averaged 14 quarts to the bush. They are set 6 feet apart and grow so strong that the bushes interlap each other each way. We have wood of the Holland which is 4 inches in diameter at the butt of the cane. There are hundreds that are 2 inches at the butt.

Mr. Phillips—I would like to say something about plums. In Lake City, Minnesota, they have brought out a new plum called Sitkin. Names of plums—De Doto, Wolfe, Cheney, Aitken.

President—What is the further pleasure of the society this afternoon?

Mr. Abbott—I would like to say a word about the Fay Prolific. They do well with me. I have one-half acre of ground, young bushes, and I find they are far ahead of anything on the market. I was offered 11 cents a box wholesale for them. I use hard wood ashes on my grounds. I have a few Industries which are well loaded with fruit this year.

Mr. Kellogg—In regard to the Fay currant: I have been fruiting it for the last ten years. Had 6 rows 19 rods long.

Mr. Abbott—I picked 50 cases of the Fay Prolific.

President—It seems to be the opinion among the commer-

cial fruit growers that they are a commercial failure. Both the Fay currant and Industry gooseberry.

Mr. Herbst—The Fay bear about one crop and that is all.

Mr. Reed—I am surprised that the Red Dutch currant has not yet been mentioned.

Mr. Kellogg—They produce enough currants, but are too small.

President—Is there anything further on this currant question or gooseberries?

Mrs. Johnson—I have been wondering if Omro is not adapted to the Fay currant. I saw some nice ones on Mr. Bushnell's grounds that were wired up.

Mr. Smith—I have noticed that a good many of our gooseberries this year turn yellow and then drop off. They drop off where the bushes are a little thicker. Is it because they are too thick?

President—I think it is due to the heat.

Mr. Smith—They drop off on the inside of the bushes, not on the outside.

Mr. Reed—I would like to call on Mr. Coe for his experience with the Yellow Rust.

Mr. Coe—We have a little experience with it on the Red Jacket, not very much.

Mr. Reed—Know of any remedy?

Mr. Coe—Bordeaux mixture.

President—I would ask the committee on awards to do their work as soon as possible. There has been a fine program arranged by the Omro society for this evening, and I hope to see a large house.

President—Motion for adjournment is now in order.

Motion prevails.

Adjourned.

Wednesday Evening.

President—First number on our program this evening is a solo by Mrs. Barker.

Second:—Recitation by Miss Grace Wheeler.

Third:—Music: Omro quartette.

Fourth:—Recitation by Miss Clara King.

Fifth:—Instrumental music.

Sixth:—Recitation by Miss Cassis Lewis.

Seventh:—Song by Miss Webster, Omro.

President—Ladies and Gentlemen: We have with us this evening, Mr. Perriam of Chicago, and as he leaves in the morning, perhaps Mr. Perriam can give us some words in this line, and we would be pleased to hear from him.

Mr. Perriam—Ladies and Gentlemen: I wish I had time to-night to talk to this large audience I see before me. I have often wanted to come up here, but have never had the chance to see the river that Marquette and La Salle and all the Jesuit fathers made famous. I have seen it to-day. I am also more than glad to have the privilege in my old age to come to this beautiful village. More than glad to see this magnificent show of plants, flowers and strawberries such as only Wisconsin can cultivate. I am still more than glad to see the progress of horticulture since my 59 years of life in the N. W. country has seen it grow from the smallest in crudest proportions up to what it is now. Where we find horticulture, where we find the fruit grower and the lovers of flowers, we cannot fail to find a community that is virtuous and healthy. Because of fruits, we get our health. I am glad to see the gardens, the kitchen gardens, where 1-2 acre of land, carefully cultivated, will furnish half the sustenance of the average farmer, and I am more than sorry that I am obliged to leave for my home in the morning, and that regret I have had since I came here, and I am sorry that I cannot stay with you to enjoy the pleasures you have before you tomorrow. I thank you.

President—Ninth—Song, Miss Ethel King.

Tenth:—Recitation, Miss Edith Treleven.

Eleventh:—Music, Quartette.

Twelfth:—Violin Solo, Miss Harriet Jones, Oshkosh.

President—Ladies and Gentlemen: We have been very pleasantly entertained this evening and I wish to announce that we have been reinforced by Prof. Goff of Madison, and Vice-President Toole of Baraboo. We thank you for your attendance this evening.

President—I would also wish to announce before adjournment, the committee on resolutions. I will name Mrs. Johnson, Messrs. Herbst and Kellogg.

President—There is another number on our program, "Medley," by the Omro quartette.

President—We are just getting waked up I guess. Request has been made to have Prof. Goff talk to us this evening for a few moments.

Prof. Goff.—Ladies and Gentlemen: It seems to me like a pretty long day when you get up at 4 o'clock in the morning and begin with the plum curculio, when finishing up after 10 at night. But if you can stand it, I think I can a little while longer. I can tell you that I am in earnest when I say that I am glad to meet the people of Omro. I have often heard of this society, and I am really glad to meet you today. I shall not detain you longer because I am sure that after the pleasant entertainment you have had, you will not care to have me do so. When Miss Treleven was giving that excellent recitation, there was one thought brought out, and that has been in my mind ever since. The thought had to do with the interminable labor that the farmer has upon him. I remember that I used to think that life was a drudgery and very little else. That was when I was at home. Now about that thought. It is this: The lady expressed a regret that there was not an opportunity for study in connection with the work, and I must say that it was only after I found an opportunity for study that I realized any comfort. One of our young men took the short course. I called on him a short time ago to see how he was getting on. He told me "that in the spring when the work commenced he felt as a horse feels that has a sore shoulder and has a collar put on him." He

said, "Since I was at school at Madison things are different, things are full of interest to me. I see more in my work, and instead of dreading the spring work, I am impatient to get to work." Every crop is an inspiration. We can get inspirations out of our drudgery of farming (if we can call it by so ignoble a name). We can learn a great deal out of the dullest subject. We can learn things which will be of interest and pleasure to us. I will say that the two or three weeks I have been working several hours every day beneath the earth to find the roots of the strawberry plant. Although I had on a pair of muddy overalls, and my coat-tails were covered with mud and I did not like to look up for fear some one would see me,—I can tell you that I have been happier down there in that hole than I have in a good many places higher up. Why? Because I was learning something. I was investigating something I had never seen before. I wanted to see where they get the material to make these delicious berries of. That is how to be happy on a farm, and make drudgery pleasant life.

Mr. Holmes—I am glad I came to Omro. This is my first visit to the Fox river. I have enjoyed every minute. Prof. Goff's remarks made me think of the beauties of fruit growing.

President—I think that our people are now in a mood to enjoy another song. We will call on Mrs. Barker, also Miss Jones, Oshkosh.

Secretary Philips—Mr. President: When I was here at Omro last I enjoyed a very fine entertainment. A Miss Katherine Smith took part. She is not on the program this evening but I understand she is here. Will you please call her out?

President—Request has been made that Mr. Wakefield of Fremont speak to us a few minutes.

Mr. Wakefield—I believe they have me on the program for tomorrow and I am not limited. I would prefer to make a longer speech tomorrow and be let off tonight, but I will say I have been highly entertained. I do not know when I have spent an evening that pleased and instructed

me as much as this evening. I am very glad that I came. I am glad the secretary urged me to come. I did not expect to see so large a crowd here. Where did they all come from? I see Prof. Goff is here and a few from abroad, but I suppose most come from this place, from Omro. It is a larger place than I thought and has such intelligent people.

President—Miss Grace Wheeler has consented to give us another recitation to close the evening program.

President—Motion to adjourn in order. Motion prevails.

Adjourned.

Mr. Kellogg—Note when the first strawberry blooms because 30 days thereafter you can pick the first berries if nothing happens.

Thursday A. M., 10 o'clock.

President called the meeting to order.

President—It is now past the time we were to call the convention to order this morning. There are a number here who are anxious to hear the report of the committee on awards, and we will call for this report this morning from Mr. Coe, who is chairman of the committee on awards.

Mr. Coe—The committee beg leave to submit the following report. We have taken the program and given the premium to each item as printed in the program:

Best Display of Strawberries—G. J. Kellogg, 1st; Thayer Fruit Farms, 2nd.

Best for general cultivation—Geo. J. Kellogg, 1st; L. A. Minkler, 2nd.

Best Early—Geo. J. Kellogg, 1st; Thayer Farms, 2nd.

Best Late—Thayer Farms, 1st; G. J. Kellogg, 2nd.

Best three for farmers—Thayer Farms, 1st; G. J. Kellogg, 2nd.

Best Warfield—Geo. J. Kellogg, 1st; Mrs. A. S. Crocker, 2nd.

- Best Jessie—G. J. Kellogg, 1st; S. Pingrey, 2nd.
Haverland—E. Humphrey, 1st; L. A. Minkler, 2nd.
Bubach—E. Humphrey, 1st; L. A. Minkler, 2nd.
Van Deman—Henry L. Wurl, 1st; Thayer Farms, 2nd.
Enhance—Geo. J. Kellogg, 1st; L. G. Kellogg, 2nd.
Crescent—Thayer Farms, 1st; Geo. J. Kellogg, 2nd.
Wood—L. G. Kellogg, 1st; Geo. J. Kellogg, 2nd.
Earl—G. J. Kellogg, 1st.
Eureka—Geo. J. Kellogg, 1st.
Greenville—G. J. Kellogg, 1st; Thayer Fruit Farms, 2nd.
Wilson—Geo. J. Kellogg, 1st.
Michael—L. G. Kellogg, 1st; Thayer Fruit Farms, 2nd.
Gandy—G. J. Kellogg, 1st.
Sparta—A. J. Philips, 1st; Thayer Fruit Farms, 2nd.
Timbrell—G. J. Kellogg 1st.
Best new seedling—J. L. Herbst, 1st.
Best show currants on bush—J. M. Smith & Sons, 1st; L.
A. Minkler, 2nd.
Raspberries on cane—Thos. Tanner, 1st; L. A. Minkler, 2nd.
Best gooseberries on bush—Mr. Floyd, 1st; Chas. Abbott,
2nd.
All of which is respectfully submitted.
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President—What is your pleasure in regard to the committee on awards of fruits.

Mr. Kellogg—I would like to know if you are going to withhold specials on others on exhibition.

Mr. Coe—We did not give any premiums on specials. We only gave what was given on the program. We found there were some specials entered but we did not think it wise to give specials any premiums.

Mr. Kellogg—Last year there were awards on specials and they certainly deserve some mention.

President—Motion made and seconded that the report of the committee be accepted and adopted as read.

Mr. Coe—Do you instruct the committee to make honorable mention of the specials?

President—Yes.

Mr. Coe—We will do so.

Mr. Kellogg—I would like to have it this way: If there are any new varieties come out in the last 2, 3, or 4 years, if there is a united opinion in their favor, and I would like to have some specials mentioned that are promising.

Motion prevails that mention be made.

President—Committee on awards of flowers should report. They are at work—not ready to report. I would ask if the vegetable committee are ready to report. We will listen to the report of the committee on vegetables.

REPORT.

Best exhibit garden vegetables—J. M. Smith & Sons.

Best peck of peas—Will Kroll, 1st; Thos. Tanner, 2nd.

Lettuce, best one-half dozen heads—J. M. Smith & Sons, 1st; J. M. Smith & Sons, 2nd.

Radishes, best one-half dozen bunches—J. M. Smith & Sons, 1st; J. M. Smith & Sons, 2nd.

Onions, best one-half dozen bunches—J. M. Smith & Sons, 1st; L. A. Minkler, 2nd.

Beets, best one-half dozen—L. A. Minkler, 1st; J. M. Smith & Sons, 2nd.

Asparagus, best one-half dozen bunches—L. A. Minkler, 1st; Mrs. A. S. Crocker, 2nd.

Best 6 stalks pie plant—J. M. Smith & Sons, 1st; Stenett Pingree, 2nd.

President—We will now take up the topic which was brought over from yesterday's program, "The Roots of the Strawberry Plant," by Prof. Goff.

Prof. Goff—As I said last night, I became considerably interested in the roots of the strawberry plant. I have made it a little hobby. Some may call me a root crank, but it is a good thing to hear cranks talk once in a while. It has seemed to me that we have been neglecting one branch of horticulture and that is the part beneath the ground. We cannot change the temperature of the air nor the combination, but with the soil we can do much. We can effect it in a

great many ways if we know how, and if we know why we are doing it, and it seems that we should study the parts that grow beneath more. Not those above less, but those below more. I am doing something of this work. It is a somewhat different subject to study, especially as it is difficult to how to others, because it is difficult to mount the roots in their natural position. I will explain how we have been studying. Our objects were two fold. To find out as much as we can about the strawberry plant and other plants, and second we wish to preserve those roots in mounted form so we can show them to others. The problem is how to do this. Our method has been this: To select a plant we wish to study. Dig a ditch by the side of the plant with perfectly straight sides in front of the plant we wish to examine and close to it, not so close as to divide the crown of the plant. Then we have made a frame that I might compare to a section of a picket fence. It is a lattice frame and we put wires through it. We set this frame up against this wall we have made. We then push the wires through between the roots of the plants, sometimes they go through the roots; this is all the better. After we have these wires pushed in, we dig another ditch so as not to touch the wires. They are 10 inches long. We then take a stream of water, using a force pump or spraying pump and nozzle and pump water against this dirt. When the soil is heavy it is hard work; it requires patience. We gradually wash this earth away and leave the roots hanging on these wires. One side is open to view. I have made a mistake. I intended to bring two photographs of our strawberry roots and raspberry roots, but just as I was ready to take the street car, I saw that two of the pictures had been mislaid, and although I am going to talk on them, I cannot show you the picture. I can show the roots of the raspberry plant as they are washed out and this will give you an idea. I will describe to you the roots of the strawberry plant. This photograph of the frame is 4 1-2 feet long, 3 feet in depth. You will observe the roots attached to wires and reaching 2 1-2 feet below the frame. We trace it down 5 feet into the earth and sometimes they reach still further, but we could not wash them

out, as the roots are too delicate. They also extend laterally a distance of 4 1-2 feet and you will see by looking at this how they look. We could not secure all of the finest roots, but we secured the majority of them and that is certainly a large number.

You will pass these around, and return them to me, please. Now, in regard to the roots of the strawberry I wish to say right here that the plant roots are different from any other plant I have examined. It differs in two respects. First. They do not extend as far laterally as the roots of almost all the crops that we have examined, and not as deeply. While I was connected with the New York station I assisted in washing out the roots of almost all of our ordinary farm and garden crops. It is a common experience that the roots of most plants extend as far as its branches, sometimes further, and the roots, instead of going downward, start laterally. We found that the main part of the roots lay on a layer of ground that is just beneath the plow level. The strawberry roots do not spread but a very short distance beyond the leaves and run downward mostly and not as deep as I expected to find them. We find that the deepest roots scarcely extend deeper than 2 feet and most of them one foot from the surface. When we think that the top of the strawberry plant is almost the shortest of any crops that we grow—that is why they do not run deeper and do not spread more. We washed out a section of a matted row 2 feet wide. The roots extended three inches on either side and the leaves extended about two feet. I make this statement of the strawberry plant that I cannot make of any other, and that is that the roots are beneath the leaves and not elsewhere to any great extent. Now, this fact has already formulated a new system of cultivation. In cutting corn we do not cut deeply as we may cut off some of the main roots. If we plow 4 inches deep in raspberries we would cut off roots. Now, with the strawberry we can plow 1 foot beneath without any danger to the strawberry. This is important and we would not have known this if we had not examined the roots. Another thing it has taught me, is this: The best place to apply

water to a strawberry plant is between the rows and not on the rows, and I have studied to find a practical system whereby the space between the rows will be higher than the space on the rows. If we could have it 3 inches higher than the space where the berries grow, we would have an idéal surface for irrigation. The water would soak immediately into the roots; there would be no waste, loss of time or water. As it is now, we put our water between the rows. We have found that the roots of strawberries are almost all small delicate roots, branch beneath the plants and do not extend beyond the plants. There are no large leaders. They are like the roots of grasses. The system is delicate and elaborate, and the closer we study it, the more delicate we find it. We can use but a small stream of water on the roots, and the stream would break them if there is too much water. The root hairs, which are really the part that take in the water, are so delicate that it is practically impossible to remove them from the soil. We have found them by the use of a magnifying glass. It is difficult to do this. The root hairs take in the most water. The system is extremely delicate and extremely elaborate. If we compare it with our plumbing system in our large cities, it would put them to shame. It is simply marvelous. Each hair root is a pump, in that it has valves. It absorbs water from the soil with considerable force. What then is the ideal soil for the strawberry plant? It should be a soil that these delicate roots can penetrate. Not heavy clay. These root hairs, it is very well proven, cannot exist any long time without oxygen. If it were flooded to a driving out of all the oxygen, it would kill them, if a corn crop is overflowed, it will kill the crop—so it is with the strawberry plants. The root hairs are then starved. It must be permeable. If soil is in its proper condition it is surrounded by a little layer of water. We should strive to make the soil as it should be.

Mr. Toole—I would like to ask if this lattice work was taken across the roots, or was it taken lengthwise?

Prof. Goff—It was taken crosswise.

Mr. Kellogg—What variety of strawberry did you wash?

Prof. Goff—Wilson. In New York we washed other varieties but we found it about the same.

Mr. Toole—It seems to me that it is a settled fact that we should water our berries.

Prof. Goff—We pump water out of a well, and put it on the strawberries and make money by doing it.

Mr. Herbst—Will you explain why a strawberry plant will resist drought better on a loose soil than on a heavy? That is, if it will do so?

Prof. Goff—Well—if it will do so—that is well put. The question hinges on the ability of the soil to lift up water. I will mention right here that I have found it easy to explain why the strawberry plants give out suddenly after a period of drought. I think it is because the roots do not go down deeper. If you will examine the photograph of the roots of the raspberry plant you will see that the roots go down 5 feet. The strawberry roots only one half as deep so they cannot stand as much drought as the raspberries. They do not have the depth of soil from which to take the water. The upper layers give out first, and as soon as it is down to a depth of 2 feet the strawberry plant cannot reach it, and the plant will fail unless we give it water.

Mr. Kellogg—What do you know of subsoil?

Prof. Goff—A heavy soil is benefited by subsoiling. It depends on the soil; a slight soil is not helped so much.

Mr. Smith—Do the roots of the strawberry plant run deeper in a clay soil than in a loam?

Prof. Goff—I cannot answer that question.

Mr. Smith—You speak of washing in a heavy soil.

Prof. Goff—We have only one kind on our soil. I would advise on general principles frequent applications of well prepared fertilizer. I do not know as I have changed my views since washing the roots. I advise at least annual applications of well prepared, well decayed fertilizer. I

would apply it to the rows mostly, it will reach the roots more than if it is put between the rows.

Mr. Bushnell—In shaping the ground—would it not lead to this difficulty, in the winter and spring when the water between the rows freezes? Would it not ruin the plants?

Prof. Goff—There might be danger of that unless the ground is prepared for irrigation.

Mr. Bushnell—I had a few set out last fall and the rows were a trifle lower than the outside, and when the spring came my plants were dead.

Prof. Goff—It would be well to have an outlet.

Mr. Bushnell—There was an under-drain, but the ground being frozen it did not run off.

Mr. Hockney—What is the best fertilizer for strawberries?

Prof. Goff—I should prefer a well composite or stable manure.

Mr. Smith—I would like to ask if the professor has made any experiments in growing strawberry plants. In regard to growth of plants where well composite manure has been applied.

Prof. Goff—No, sir. Do you mean whether they will grow better?

Mr. Smith—I have noticed in the last few years that our plants grow stronger by using green manure, by plowing in green manure.

Prof. Goff—Now in regard to irrigation, we use the flowing system. We find that it is better for the surface of the ground to let it flow than to spray it. We have taken this system from the western system; from the California system.

Mr. Smith—But is not spraying more like nature? More like rain?

Prof. Goff—Possibly that is true—however I can only speak from experience on one side of the case.

Mr. Smith—I would like to make a few remarks on my experience of whether or not it is practical to water our berries. I spoke yesterday of a bed of Warfield strawberries. There were perhaps 3-4 acre in the plat. It was the second crop; that was three seasons ago. The plants grew very

thick indeed, almost like lawn, so thick that I was doubtful if they would produce a crop or not. Many growers saw them and wanted to hear from them. It became very dry. So dry that our neighbors who had no water got no berries after the first picking. We used the spraying system; we watered that ground at an expense of \$5 per day. We kept that 3-4 acre in good bearing condition. One man did the spraying and some other work besides. He spent from two-thirds to three-quarters of his time on that 3-4 acre. We got a large crop of berries, whereas without that water it would have been a total failure after the first or second picking.

President—Mr. Smith, what was the shipping qualities of these berries that were irrigated?

Mr. Smith—Our furthest shipping point was 200 miles. We shipped by express entirely. We pick the berries and haul them from the field to a cooler, where they are kept at a temperature of about 50 or 55 or below 50 sometimes, but not during the day time. They stay in there until they go out. Sometimes a few hours, sometimes over night, and we have had no complaints whatever. I might say that this watering continues for about 10 days during the season. We spent \$40 or \$50 on that three-fourths acre. We have over three hundred bushes to the acre.

Prof. Goff—The irrigation made the fruit somewhat softer, but as the yield was good, you can afford to put up with the softness. I would like to compare our experience with that of Mr. Smith. This year we used a gasoline engine, pumping water out of a well. The well stands 20 rods from the strawberry field. We found it costs 50 cents per day for gasoline to run the engine. It requires no engineer. The only cost besides the wear and tear on the engine is the expense of 50 cents per day for gasoline. It delivers a stream of water about the size of one's wrist, sometimes larger than this, but when it pumps the water it delivers a stream about the size of one's wrist. It is easy work for one man. When we have a field well mulched, it sometimes does not require a man on the field. The expense of one man on the field to

distribute the water is \$1.00 per day; and we can irrigate thoroughly one-fourth acre per day. To irrigate an acre it costs about \$6.00. We find that one irrigation lasts for about one week anyway. This year we have only irrigated twice and would have this week, if it had not rained. We use wooden troughs made of two boards nailed together, one trough sets in the other. We have little valves to regulate the flow of water and we use a little stream about the size of one's little finger and let it run all day long. Not any of this water goes to waste. I find that if it is properly distributed it will go over our whole bed. We wet it down thoroughly and gradually.

Mr. Smith—Can you pick berries immediately after irrigation?

Prof. Goff—We do not like to do it. We have our ground mulched but we do not think it is good for the soil. We do not pick every day. We could do it if it were necessary.

Mr. Kroll—Do you use cold water from the well, or do you let it stand for several hours?

Prof. Goff—Yes, we use it right out of the well. We have made experiments in the green-house. We find we can water plants with water 40 deg. temperature and that it will not check their growth any more than if the water were 70 deg. I believe the soil very soon warms the water. We do not regard it necessary to warm the water.

Mr. Smith—I would like to ask whether the foliage is damaged by water?

Prof. Goff—We have not noticed any damage. None whatever.

Mr. Reed—I would like to ask Prof. Goff if he thinks in a season with as much rainfall as we have had this season—does it require any irrigation?

Prof. Goff—I do not know how much you have had in your section. We have been sorely in need of rain in ours. We have not had an excess. We seldom have enough rain during the summer months.

Mr. Toole—What is the width of your bed?

Prof. Goff—I cannot tell you the width of our bed. We

have one that is one-half acre, and the rows are 100 feet long. It is something like 100 feet in length and 200 feet in width and the pipes run along the 200 feet side. The spraying system has one great advantage over others and that is it does not make it absolutely necessary to have the ground prepared beforehand. With our system where the water flows by gravity we must have the proper incline and not too much, by regulating our rows we overcome that. The flowing system has that disadvantage, the ground must be made right so that the slope will be gradual and not excessive.

Mr. Kellogg—Will this topic of irrigation come up again?

President—It is not on the program.

Mr. Smith—I would like to refer Mr. Kellogg to Smith Bros., Green Bay. If he will spend two cents in writing a letter to them and he will find out whether he can afford to raise water 75 feet. He will surely get a reply.

Mr. Reed—I would like to ask Prof. Goff what amount of rainfall they have had in the last ten days at Madison.

Professor—I can only give you a rough estimate. We have had about three showers and only one has been a good hard shower, and that came yesterday while I was getting ready to come here. Up to yesterday we have had a deficiency.

President—I must call this subject to a close. There is a paper by Mrs. Chappell.

Mrs. Chappell—I am not prepared with my paper, as I was on the program for last evening, I have not my paper with me.

President—We will now begin upon the regular program for this morning. First topic on the program by Dr. Loope of Eureka.

WHAT IS THE HORTICULTURAL OUTLOOK OF THIS SECTION?

Dr. T. E. Loope, Eureka.

The question is easy to a horticulturist who lives here. The answer might not be satisfactory to a merchant, banker, lawyer, doctor or capitalist, when viewed from a financial standpoint; but the horticulturist is above the trifling annoyances of money returns, except when some hard-hearted creditor wants pay for favors rendered in his line of business. He lives above the common plane of life as compared with those who figure out their net profits in hard cash. He sits down in the early spring and with pencil in hand shows you in a few minutes just how much his acre of strawberries will bring in, based on a full crop. The question of winterkilling, frosts, drouth, non-fertilization, or an over-loaded market has no share in the problem before him. Then, with the figures in his pocket, he goes out and finds that winter has taken half the plants. What matter? The balance will grow larger berries. The frost kills half the bloom,—still the size of the berries increases. Drouth comes and cuts out another section of berries—the price will be better,—and only when the season is over and creditors want their dues and receipts are not enough to satisfy the demand, does he begin to realize that something is wrong, so he sits down to figure out—a surplus for next year!

There are, I am sorry to say, a few sordidminded, grasping horticulturists in every community who insist on striking balances when the season has closed, but they are fast leaving our ranks and taking up other lines of business where they can gratify their lust for gain. They are wedded to the idea that money is one of the essentials of happiness. They are of the earth, earthy. They do not realize that in the upper etherealized strata of Anticipation lie pleasures that belong only to the true, refined horticulturist whose fancy still uplifts him above the coarse realities of

life, crop or no crop. "The Beautiful Island of Sometime" looms up as fair and green and vivid as ever, after repeated failures. The flowers and fruit of that enchanted isle look as deliciously tempting to his mind's eye after a disastrous season as before. He is like the true Christian who sings songs of praise and rejoicing while the flames consume his earthly frame.

History is silent on the subject, but I have a firm belief that all the multitude who suffered martyrdom were originally horticulturists. Heaven is without doubt full of them; still, notwithstanding the extreme drouth reported, I also believe some are yet struggling against adverse circumstances in the other place.

With three years of failure the acreage of small fruit has steadily decreased and some who grew considerable fruit have none now. Those who have persisted and have kept planting new areas have the promise of a good crop of raspberries and strawberries. Blackberries have suffered most, whole fields having been killed by drouth. What canes survived the winter show an abundance of fruit.

Strawberries were unfavorably affected by the winter and by the hot, dry weather that prevailed about the middle of June. The appearance of the berry is similar to non-fertilization but I believe it is due to causes above stated; still pistillates suffered most. A chromo is hereby offered to the person who originates a staminate berry that will produce fruit as attractive and with the prolific tendency of the Warfield.

New Setting never looked better than it does this year, and this fact will have an influence on the heated imagination of the horticulturists of our section and result in an increased acreage another year.

Orchards are looking fine in point of growth, with but few apples.

Parsons and Loope's orchard of about four thousand apple trees, set out five or six years ago, looks promising and they imagine that they will pick ten thousand bushels of apples in the "beautiful, golden sometime."

When the electric road is completed from Oshkosh to Berlin, as projected, the increased facilities for transportation to the main lines leading north will result in multiplying the acreage and number of persons engaged in the business of horticulture in this section.

President—Do you wish to ask the doctor any questions?

Mr. Herbst—How did you see the paper I am to read?

Dr. Loope—I am a mind reader.

Mrs. Treleven—I wish to tell you all why the doctor is such a successful horticulturist. At one of our meetings we asked him for a talk—and he said “Have faith—have faith—and you will be successful.”

Dr. Loope—It is the only thing that does bring success. The person who has faith is successful. He doesn't need dollars and cents or all the big berries like Kellogg, but if he has faith he will be successful.

Mrs. Smith—In a very old volume we are told that “Faith without works is dead.” (Applause.)

PLEASANT AS WELL AS PROFITABLE PHASES OF HORTICULTURE FOR A YOUNG MAN.

By John L. Herbst of Sparta.

After two years of drouth, the years 1894 and 1895, when the small fruit crops were in some localities a partial failure and in other sections a total loss. Another year (1896) when the plantations tried to recover themselves and yield a crop of fruit at the same time and failed to do either. This year, after we thought all our troubles were over and that our plantations of blackberries, red and black raspberries, strawberries, currants and gooseberries would outdo themselves; after the strawberries were in bloom and some berries par-

tially formed, blackberries and raspberries in the bud ready to burst open, currants and gooseberries very nearly all formed, the thermometer drops down to 24 degrees—8 degrees below the freezing point, and what is the result? About three-fourths of the blackberry crop goes with them. Early red and black raspberries totally destroyed, along with currants, grapes and gooseberries on the outside of the bushes, badly damaged, and young plums blackened. With all the above discouraging features, I am placed upon the program with the subject—"The Pleasant as well as the Profitable Phases of Horticulture for a Young Man."

If I were to tell my horticultural experiences during the past four years, the subject—"The Unpleasant as well as the Unprofitable Phases of Horticulture for a Young Man," would be much more easily handled. But we must have reverses, if we would have successes. The one who has the most reverses in his undertakings, as a rule becomes the most successful.

I have seen as handsome an acreage of blackberries as was ever grown, every hill healthy and strong, each cane with its laterals evenly distributed upon it, each lateral budded to the tip with fruit, buds ready to burst open the first warm day, the field giving a handsome appearance, and hope and promise of a plenteous crop. The next day I have seen the same acreage, while in appearance it was the same, still the buds, upon examining them, were found to be frozen, and what gave promise the day before of 200 bushels to the acre, now showed a total or nearly total loss. I have seen acreages of strawberries in the best of condition, matted rows evenly distributed with plants that were strong and healthy, intermingled amongst the growth of foliage, fruit buds, blossoms and berries partially formed were in abundance. The strawberry fields in and about Sparta within the past eight years have never showed such promise as they did this year. Immense clusters of buds and blossoms fairly covered the rows, and the hopes of the grower were placed high. He was eagerly waiting the time when he could pick, pack and ship

the fruit and receive his returns or his wages, that he had been working for.

But the morning of June 1st things had assumed a vastly different situation. While the damage upon the strawberry fields was not so great as upon the cane fruits, still traces of the frost were to be seen upon the fruit stems in various stages. Some berries quarter grown were frozen through, Very few of the buds were damaged, and the strawberry crop will yet be good.

But with all the reverses of the past four years, we are not discouraged. We now look at those, who when drouth ruined their plantations, plowed them up and vowed they would never again plant small fruits. They planted winter grains, corn, oats and potatoes. Their winter grain killed out, they plowed up again and put in oats, corn and potatoes. What could they put in? There was nothing else left for them. They would never again put in small fruits. They harvested their oats and corn, and dug their potatoes. What did they get for them? Oats 15 cents a bushel, the same price as we have sold many a single quart of berries for. Potatoes they sold, what did they sell for? twelve cents, yes ten cents a bushel, the price of a quart of berries. Did you ever think of it?

One quart of berries buys a bushel of potatoes.

One quart of berries buys a bushel of oats.

One bushel of berries buys a barrel of apples.

One bushel of berries buys a cord of wood.

Two bushels of berries buy a barrel of flour.

But you will say it takes more work to raise these berries than it does the oats, corn or potatoes. Not a bit more in comparison to the yields the different crops give. Where is the acre of potatoes that will yield 200 bushels of potatoes, and sell for \$2.00 a bushel? Where is the acre of oats that yield 200 bushels of oats and sell for \$2.00 a bushel, and where is the acre of corn that will yield 200 bushels of corn and sell for \$2.00 a bushel? It may seem to many that I have placed the yield of berries

at 200 bushels too high. It is not. I have helped plant, care for, helped to gather and dispose of 2,000 bushels of blackberries, taken from ten acres, or an average of 200 bushels to the acre. One acre alone yielding 312 bushels. What has been done can be done. We have never yet seen a crop of anything but what we have found its equal sometime, somewhere. Just tell a big story (among horticulturists) and you will find some one that can tell one better.

The average laboring family will consume in the course of a year, 6 barrels of flour, 30 bushels of potatoes, 300 pounds of butter, and we will allow about 1,000 pounds of meat. Figuring up the above at the present market price we find that it amounts to about \$200. Did you ever think how many bushels of berries it takes to bring in \$200? One hundred bushels of berries make 200 16-quart cases. These net will bring \$1.00 per case or \$200.

This is figuring only about 6 cents a quart for the berries and one acre will produce them. One acre rightly managed will produce a quantity of fruit, which properly disposed of will buy the living for the average family. I have given the above figures to show how proceeds derived from one crop can be made to produce some of the necessities which the fruit grower cannot very well produce, and to show how it may be done.

The prayer of the wise, "Give me neither poverty nor riches," is answered in horticulture. The fruit grower may never be poor, he may never be rich, but with fair management will never be poor. He may be rich enough to secure all the comforts of life and many of the luxuries. He will never be so poor as to be led into temptation or suffer from want.

Probably one of the most pleasant and profitable phases of horticulture for a young man is attending both the summer and winter meetings of our Wisconsin State Horticultural Society. I always look ahead for them. It is like going to a revival meeting and being converted. You see the old members and talk with them, they tell you their successes and failures. You find out that in order to have suc-

cesses we must have failures. You get new ideas and purposes, and when you return home you enter upon your work with renewed vigor.

It is admitted by all that a person's business, or profession has a great influence on his life and character. It is admitted by all that a business that deals largely with the beautiful has a refining influence on the worker. It is admitted by all that the business or profession that deals with the useful and necessary has an influence for the good and adds strength of character to the individual. It must therefore follow, that the business or profession that best combines both the useful and the beautiful, must be the best of all. In no business, profession or labor in life is the useful and beautiful so completely blended as in horticulture.

The following compliment was given to members of this society as a body to me by a person who has always been deeply interested in character reading, one who has met in her life many different types of men, business men, politicians, men of literary tastes, etc., etc. She says: "I have never met men (and I will add the women also) who make a stranger feel so thoroughly at home as you horticultural people. They have such kind and pleasing expressions, so different from the earnest, care worn, sharp and eager expressions that business men have." And why should this not be so, the above phrase, that a person's business or profession has a great influence on his life and character, shows itself true. Where is there a business or profession that promises more for the young man than horticulture?

President—This paper is now open for discussion.

Mr. Philips tells a good story.

President—Next subject on the program is "Preparing for Winter Flowers," by Wm. Toole of Baraboo.

PREPARING FOR WINTER FLOWERS.

By William Toole, Baraboo.

We often receive inquiry for some kind of plant that will bloom all the time. As succession of flowers requires extension of growth, we may imagine what might be the form and dimensions of such a plant after a considerable time of continuous blooming. Even with our most free-blooming kinds, there must be cutting back, a rest to the plant and a renewal of its flowering energy. To this class belong heliotropes, geraniums, roses and the like.

If our geraniums have bloomed in the garden all summer they may be cut back in the fall, re-potted and grown through the winter to give very early spring bloom. But if we pinch back the growth of the same plants in midsummer, and give a little root-pruning at the same time, we may, by potting early in September, have strong blooming plants in early winter if there is a reasonable amount of sunshine. Still better plants may be had by taking young plants in the spring and growing them on in pots, keeping pinched back for a time to give more branches for blooming.

Cuttings started early in July can be made into nice plants for midwinter blooming. Cuttings taken in the fall just before the frost cuts things out of doors, can be grown into splendid plants for late winter flowers and an all-summer show.

Geraniums are easily rooted in summer in damp sand where there is some shade. Heliotropes may be rooted better in wet sand in the sunshine, and geraniums must have a growth of preparation to fit them for winter flowering.

Success with roses in the house is uncertain, but best results can be had only with everblooming kinds grown through the summer from young plants in the spring.

Much pleasure may be had from the new Marguerite carnations, picking out the best in the garden just as soon as they show flowers. These should be pinched back to

keep from blooming, then pot them up late in August and allow to grow to flowering.

Named varieties of florist's carnations should be treated in the same way from young plants which have been started from cuttings late in winter.

Many of our annuals, if seeds are sown in August, give a fine addition to our supply of winter flowers. Of these we may mention mignonette, ten-weeks stock, summer chrysanthemums, phlox drummondii, alyssum, candytuft, petunia, snapdragon, godetia, tall nasturtium, and in fact any of the kinds which commence to bloom in three months after sowing the seeds. All of the foregoing need a fair amount of sunshine, which is often lacking in November and December.

There are some kinds of plants which will bloom with little sunshine. We may mention primulas, cinerarias, cyclamen, papsies, most of the bulbous flowering plants, and our early wild flowers. Primulas may be sown as late as July 15, but better early in May; cinerarias not before August. Pansies should be sown as early as the middle of July, and if they are grown cool and planted into shallow boxes in September they will in a cool room give nice flowers through the early winter months. Any early spring-blooming plants, after their season of rest and a little of late fall frosts, may easily be forced for winter flowers. We can have a pleasant variety by using in this way our early wild flowers, like blood-root, hepatica, thalictrum anemonoides and many others. When collecting these include a few of the native ferns; planted with them in shallow boxes and covered with leaves they may be left on the shady side of the house until early in December, after which time, if not kept too warm in the house, they will be a pleasant reminder of the previous season's outings.

Last but not least, we may consider the various bulbs so valuable for winter forcing. Success with bulbs depends largely on starting a good growth of roots before the top begins to grow. I like best to press the bulbs down into a box of clear sand, cover with leaves or sphagnum moss and

keep cool and shady until a good supply of roots start, then pot into suitable soil and keep in a like situation until the pots are well filled with roots and upward growth has started, when they may be brought to the plant window for blooming. All will not be ready to pot at one time, neither will all need to be brought forward for blooming at once; so, with the succession which may be had from even one kind, and the wide range of choice to be made from narcissus in variety, Roman and other hyacinths, tulips, alliums, and others, we may have an abundance of bloom. Special directions for culture of each class mentioned would make our paper too long, hence it has seemed best to speak only of principles to guide us.

Chrysanthemums may be passed by with only mention. We should have with them, or just before, cosmos, which by its late blooming causes so much disappointment in our garden plans. If a few cosmos plants are potted now they can be pinched back, and kept within bounds, to yield a mass of bloom just after everything in the garden has been cut by frost. Cuttings from cosmos can be started in mid-summer thus making smaller plants which will bloom just as early as the larger ones.

Mr. Loope—Is the cosmos a late bloomer?

Mr. Toole—Yes. I find that they are growing them largely in California. You will find them a valuable addition to your late blooming plants out of doors.

Mr. Loope—What time would you pot?

Mr. Toole—I would pot them right away. In fall they are too large to do anything with them. They bear very much handling.

Mr. Tanner—Have you any trouble with their dropping off after they are about 1 to 1 1-2 inches high? My cosmos seem to drop off.

Mr. Toole—I do not know how you will correct it, if the air is as it is now, for we have so little wind. I do not know

how you can guard against the disease "fungus." Perhaps the Professor can tell us.

Prof. Wilson—Keep our soil clean; use new soil once a year; give plenty of light.

Mr. Toole—I had cosmos 4 feet high and yet the fungus did attack them. They were a great mass of foliage, and whole branches would grow up that way. If they had had room enough there would be little trouble.

Mr. Reed—I would like to speak of a plant. It is the *coreopsis lencolata*. It is a valuable thing. I have seen it by the acre grow wild. It is one blaze of yellow. It is a very nice thing. Could it be forced for winter-blooming?

Mr. Toole—It might be too long a time from the start of blooming.

Mr. Reed—It is certainly a plant worthy of cultivation and ought to be in every garden.

Question—Are carnations started from seed better than those from cutting?

Mr. Toole—In starting carnations from seed a very small percentage of them will become double and are very fine for garden cultivation but not up to standard with florists for greenhouse cultivation. It is easier to start 1,000 by seed than one by cutting.

Thursday P. M.

President—The first topic on our program this afternoon is: "What I Have Learned of Wisconsin Orchardng During the Last Twenty-Five Years of Actual Experience," by Mr. A. J. Philips of West Salem.

Mr. Philips—I am glad to see such an audience as you have here this afternoon. I have an idea that three-fourths of the audience are ladies and that they would be more interested in flowers or Brother Wakefield's talk than anything I can say on apple trees. I did not publish this topic right, because if I were to tell you what I have learned in the apple

business you could not go home until breakfast. I will make a few statements, however, and if anyone wishes to ask questions I will be pleased to answer them.

The first thing I learned was—that I did not know anything about it at all. The next thing I learned was that trees that were bought from eastern and southern nurseries were very unprofitable. I then commenced to set my own trees; since then my orchard is better. I have the wood of most of my varieties here. We can improve by top working. This has been advocated, but it has been a great trouble to find a suitable stock to top work. A great many failures have resulted in experiments being made on stock that was not suitable. The Duchess is a good tree, but a poor tree to top work. If I were a young man I would set an orchard. We set trees every year for top working, and that is the only sure way to have an orchard. It will only cost you \$1.00 to \$1.50 to buy them, and set some every year. You can get them from some good, reliable home nursery, and just as regular as you clean house, or plant potatoes, set out your trees. While I was at one of the Institutes I talked a short time on orcharding. When I was through a man came to me and said, "I am glad you came. I am going to set out 200 trees and I want to know what varieties I should set out." I said, "You do not want to set out 200 trees at all." He said: "That is a curious way for a man to talk who wants to sell apples trees." I said, "You put out 20 trees and take care of them and do not let them grow in the sod and do not neglect them. In a year from now you can set 20 more, and in 10 years you will have a better orchard than you will if you set 200 now."

Do not plant eastern trees. Take a tree from the east, and the roots are dried and it is a good while for them to get a hold in the ground. They manage to live through the first summer and they come into our winter in a feeble condition. If the winter is a mild one they will go through; if the next winter is also mild, and they are well located and they will be all right, but take a hard winter the first year, and it is

sure to kill them. That is the reason I advocate this. It has cost me something to learn it.

Another thing I have learned is: Plant some good stock for top-working. I have some trees that have been top worked twenty years. Last year I set 100 trees and this year 200. Every other tree I set is a Virginia crab and I top work it as quickly as I can, because these other trees will begin to fail, especially if we have hard winters. We have this evidence right on our farm. I have trees that were set and top worked and other trees of the same variety and same soil that have been bearing apples and are dead. Why is the Wealthy not hardy? is what some ask. It is hardy enough until it begins to bear. If you would examine the roots of these trees as Prof. Goff examines the roots of the strawberry plants you would find that the Virginia has double the root power that the Wealthy has.

Regarding the different varieties for the different places, these are two of the most important things. It is a good thing for a young man to start some of the trees, set grafts on the ground where you want them to grow. Do not move them. The better you treat them the better they will do for you. I have wood here from the different trees. There is the McMahan (refers to section). It has never been moved. It is as sound as any hickory tree in the woods. It was crowding another and so I cut it out. The Malinda does not bear until 15 years after it is planted.

Now I will not take any more of your time on orcharding because there are other subjects that may interest you more, unless there are questions some of you may wish to ask of me.

Mr. Reed—All of our nursery men sell nothing but trees that are three or four years old. Every man ought to insist upon taking nothing that is over two years old.

Mr. Holmes—I am glad that our secretary has talked about the Wealthy.

Mr. Smith—I am no orchardist. I do not know much about trees, but we have a few crabs out in our back yard, they bear quite well, and from what Mr. Phillips is saying I under-

stand that he is cutting off the limbs on the top and grafting them in.

Mr. Philips—Never graft a tree that is over four years old.

Mr. Smith—Will you explain top working?

Mr. Philips—Put into last year's growth three or four buds into the tree and then next spring graft the limbs. If you leave the old wood all in, you will have no successful tree. You must work off your old tree, and get in new wood as soon as possible.

Mr. Smith—Is a tree six or eight inches in diameter too old?

Mr. Philips—Yes; you will not get good results from so old a tree.

Question—What kind of a graft, a wedge or common?

Mr. Philips—I put in a wedge graft. We begin to graft trees when they are as large as my finger. I put it close to the tree. If the limb is large so the cleft will come together in spring I put it in several inches from the tree. They never break down and the limbs come out horizontal on the Virginia.

Mr. Loope—"Young men must start out right," you said, then are we to get our trees from Rochester, N. Y., did you say?

Mr. Loope—Nine-tenths of the men in Omro believe that the best tree you can get in the world comes from Rochester, N. Y.

Question—What nursery would you recommend buying from?

Mr. Philips—Of the nearest home nursery. I am favorable to trees grown on clay soil, not on a sandy soil.

Mr. Babcock—I would like to ask Mr. Philips to name six of the best varieties of apples for the average farmer.

Mr. Philips—I would say the Duchess, Hibernial, N. W. Greening, Wealthy, Virginia; top work them with Wealthy and Grimes Golden, Windsor and perhaps Malinda. That will keep well until in July.

Mrs. Johnson—Would you recommend grafting Tallman Sweet and Virginia crab?

Mr. Philips—No.

Mr. Toole—This idea of top working. Is it necessary for

every farmer to do his own grafting. Would it not be well to buy them top-worked?

Mr. Philips—They will not top work them. I recommend sending a few boys down to Prof. Goff and have him teach them how to top work.

Mr. Babcock—Now this top working business; I never saw it done until today. Mr. Philips took me into my orchard and showed me how to do it. It is as easy as cutting off a limb.

Mr. Floyd called for opinion on Grimes Golden.

Mr. Floyd—I have grown it by top working. It makes a good union with the Transcendent. Don't overgrow or undergrow and bears nicely.

Mr. Philips—I call it a good apple.

Mr. Floyd—Yes, splendid.

Mr. Philips—You cannot see the union.

Mr. Floyd—The Oldenburg wood is so hard and the pores are so close that it does not make a union as readily as the others. One reason why trees begin to fail when they bear is because they are not fed properly. I have been advocating the whole root system. In order to have a tree that will stand the drought you must have sub-soil feeders and surface feeders. I have studied roots for 40 years and ought to know a little something about them.

President—I would like to call your attention to the Wisconsin Horticulturist published by our society at 50 cents per year. We have samples here and more can be procured from Mrs. Johnson, our editor.

President—The committee on the awards for flowers is now ready to report.

REPORT.

Best collection of house plants, Mrs. Trevelen; second premium, Mrs. T. Tanner.

Best collection of wild flowers, Gertie Hanson; second premium, Bertie Graves.

Native ferns and wild plants, Thos. Tanner; second premium, Elvia Bartow.

Show of roses, G. J. Kellogg; second premium, L. A. Minkler.

Collection of roses in variety, G. J. Kellogg, J. L. Fisk.

Best bouquet of roses, L. A. Minkler; second premium, G. J. Kellogg.

Bouquet of white roses, L. A. Minkler, second premium, G. J. Kellogg.

Best hanging basket, Mrs. Trevelen.

Collection of foliage plants, J. L. Fisk; second, Mrs. T. Tanner.

Best cut flowers in variety, L. J. Fisk; second, L. A. Minkler.

Best collection of fuchsias, Mrs. Trevelen.

President—The next topic on our program is a paper by J. Wakefield of Fremont:

THE UPS AND DOWNS, THE SUNSHINE AND SHADOWS, THE ANTICIPATIONS AND PARTICIPATIONS IN THE LIFE OF A HORTICULTURIST.

J. Wakefield, Fremont, Wis.

My subject today is not one of my own choosing. I'll tell you how it happened. That miserable secretary of yours is responsible for it. If I fail you must blame him. If I succeed I want the credit.

A short time ago he wrote me a very polite note, telling me of this meeting and inviting me to come, with a paper upon some lively subject. I know he said "lively," for I remember. Well, as I hadn't anything lively on hand, I replied, accepting the invitation and requesting him to select my subject, merely stipulating that it might be as funny as he pleased; but it must be a subject that I could handle without spoiling. There was where I erred. The next paper I got up I will name the subject, and he may do the rest.

The subject is a good one, a grand one, too grand and too

good to be spoiled by only a second rate amateur. Who can describe faithfully the ups and downs, the sunshine and-so-forths in the lives of horticulturists unless it is done by an expert, one who has been there, and knows how it is himself?

I could give you a little of my own experience, and I believe I will, for that, to me, is the most interesting subject I can think of. Besides, my experience was the experience of a majority of our would-be-horticulturists at that early day, before we got our horticultural eye-teeth cut.

The first trees I set out were bought of a perambulating liar, who made me think that his dried up, eastern trash was just the thing for Wisconsin. He laid great emphasis on the word "eastern," and that caught me. I knew that eastern people were among the best and smartest in the state, and supposed trees from that direction must also possess rare attractions. You will notice that I was originally from the east.

Well, that venture proved a failure, and in a short time I had nothing left to remind me of my folly, except a few dead or dying scrubs, and an undying disgust for all itinerant tree peddlers. I still cherish about the same regard for them that a neighbor of mine, an honest Dutchman, has for map peddlers. A few years ago he was induced to sign for a county map, the agent telling him that when the map came, if he was sick of his bargain he needn't take it. He got sick, but the agent forced him to pay for the map, all the same. "Well," he said, "if I must I must, but I have learned somethings, and if a map peddler ever comes into my house again, I'll kick him out mit a broom stick."

But we are wiser now, our people are generally wiser, and are trying to profit by past blunders. We are learning to patronize home industries. We believe that our nursery-men are generally reasonably honest, and mean to give us what we bargain for. We like to see them encouraged. We don't believe they are fooling away the pittance given them by the state for the purpose of assisting them in their experiments for improving our horticulture. When they get hold of a good thing it comes to us free, and there is where tax-

payers get their money back. This world is full of ups and downs. Even horticulture is full of them. Ever since the first horticulturist allowed himself to be coaxed by a woman into filling up on green apples, and no doctor handy, horticulture has not been altogether a sure thing. It has taken thousands of years of patient toil, and scientific efforts to prevent our choicest fruits from degenerating into miserable crabs or something worse. We are still "under the curse," and that is what we are trying to remove, or at least to make more bearable.

But we have faith in the future. We believe that the efforts now being put forth by our intelligent, earnest horticulturists will yet place Wisconsin among the leading fruit growing states of the great Northwest.

I would like, before closing, to ask a few questions, and leave them for some one more scientific than I am to find suitable answers: Why is it that the raising of apples is so much more difficult and uncertain than it was twenty-five or thirty years ago? Why are our seasons so much more trying to our fruit trees now than then? That such is the case many of us know too well. Are we getting nearer the north pole, or is the north pole getting nearer us? Something appears to be "getting out of repair," what is it? We could then raise some varieties that we dare not trust now without a great deal of extra nursing. True, we are raising successfully some very good varieties, but look at the labor and skill required, and anxiety wasted. Many or most of our sister states are afflicted the same, even that much-talked-of and over-praised state, Michigan. Is the denuding of the country of its forests, especially about the headwaters of its streams, partly, at least, responsible for the change? We'll bet it is, but will not hazard an opinion.

President—Next subject on our program is a paper by W. H. Holmes of Waupaca entitled: Apples and Berries versus Potatoes for Northern Wisconsin.

Mr. Holmes—I wish to say that I have added the sugar beet to this.

APPLES AND BERRIES AND SUGAR BEETS VERSUS
POTATOES FOR NORTHERN WISCONSIN.

Mr. President, Ladies and Gentlemen of the Wisconsin State Horticultural Society: Secretary Philips was treading on dangerous ground when he invaded the great potato belt of central Wisconsin and assigned me the topic, "Apples and Berries versus Potatoes for Northern Wisconsin;" so I have modified the question a little by amending the plaintiff's proposition and added "Sugar Beets." If the nearly three million bushels of potatoes grown and marketed annually in Waupaca, Portage and Waushara counties received the same market price as they did for ten years from 1882 to 1892 there would not be much occasion to advocate the apple or berry question to the average farmer there for he would meet you with the remark that "One acre of potatoes will buy all the fruit my family can eat in a year—yes, and the sugar to sweeten it." But there is a wide difference between ten and fifty cents. When the farmer got 200 bushels of potatoes from a well cultivated acre and received 50 cents per bushel for them that meant \$100, but when he only gets 10 cents per bushel for a like amount it only means \$20. In the first instance there was at least \$80 profit; in the present instance the profit barely covers the labor of planting and cultivation. But the farmer drops into the same old groove every succeeding spring and argues that "As seed is cheap, and there may be some providential circumstance happen to raise the price to twenty-five cents this fall, guess I'll plant the usual acreage." And so it goes; the usual acreage extends from Maine to Minnesota and the price stays on the ten to fifteen cent shelf. Better indeed would it be from Maine to Minnesota if the farmers would only put in one half the usual acreage and the balance to apples, berries and sugar beets and diversified farming operations with more poultry and stock. It may be argued that such a vast amount of fruits and sugar beets would find no sale. It a good thing it comes to us free, and there is where the tax would pay the farmer to do this even though he fed all the

fruit, berries and beets to his live stock than to raise an over production of potatoes. But he would not have to feed his apples and berries to his stock. He can always find a paying market for fine, luscious apples in their natural state and evaporated in the villages and cities, and among farmers who will not raise fruit; also a market has been opened in Europe for American apples which has proved a success. As proof we give the following clipped from the Evening Wisconsin of Tuesday:

A Berlin newspaper recently commented upon the American apple as follows:

About this time of the year, Bohemian and German apples disappear from the markets. If any are found they are wretched things; or if they have been carefully kept, very dear. But the American apple that began to come last fall and conquered the German market has not only not disappeared, but is coming in enormous quantities. Last week saw 5,000 loads of beautiful red Baldwins landed in the wholesale houses in Berlin and sold, according to quality, from 15 to 35 cents for five pounds. The 35 cents was paid, of course, for perfect apples. Those sold from wagons by street peddlers vary in price, but seldom go over 75 pfennings (18 cents) for five pounds. These, too, have no faults, except a slight bruise from pressure during the voyage. They are most excellent for household purposes. It looks too, as if American apples were to continue coming, not only during the next thirty days, but, experts say, even up to the arrival of continental apples next fall. This fact is very important for our farmers, producers and merchants. And the Evening Wisconsin adds:

Having thus gained an entrance into the German market, and what is more, having gained the good will and the patronage of the German housewife, it behooves the American apple raiser to be particular in regard to the packing of the apples which are prepared for export. As Consul Monaghan puts it, "The market is made; it is only necessary to handle the business honestly and intelligently to secure it for all time."

And the berries—strawberries, raspberries, blackberries, gooseberries, currants, etc. No housewife ever had so many,

but she would like to have more to grace her table all through the season of their luxuriousness and show on her shelves just a few more cans than her neighbor for the winter's sauce.

Has the price of a quart of beautiful strawberries dwindled down in the same ratio as the potato? Not much. In most every village and city in the land a clean, luscious, fresh lot of strawberries in front of a store will go quick at three for a quarter, and even by the crate will not fall far below those figures. Raise the best of all kinds of small fruits, be careful in picking and crating them, get them quickly to market, so they will look tempting. They will then bring you a good margin of profit, besides they will bring health and happiness to all who raise or eat them.

Then comes the sugar beet proposition. It has been demonstrated by actual test that Wisconsin is right in the path of the sugar beet belt with central Wisconsin pretty near the center of the belt. Tests made by farmers in Waupaca county from seed sent out by the writer under the direction of the late secretary of agriculture, Uncle Jerry Rusk and Prof. Henry of our agricultural college, Madison, in 1891-2 showed a per cent. averaging from 12 to 15 per cent. of sugar in the juice. Beets last year near Menominee Falls showed as high as 16 per cent., thus demonstrating that if the promoters and builders of the factory and refinery at Menominee Falls had not got into a financial tangle and could have worked up the beets raised by the farmers, a tremendous impetus would have been given to the starting of more such enterprises in our state this year. As it is, through the efforts of Prof. Henry and our worthy United States Secretary of Agricultural Wilson, besides others who are enthusiastic in the cause, much seed has been distributed and will be tested by our experimental station this fall, which tests will be credited to individual growers in every county in the state showing the per cent. of sugar in the juice, kind of soil, seed and other valuable information will be published in a bulletin to induce the farmers to raise the beets and capitalists to open their purses and build and equip factories. It is said that farmers are growing quite a liberal supply of beets near Menominee Falls and will sell them to

the factory if an arrangement is made to operate it; if not they will feed them to their cows and other stock, because it has been demonstrated that they are worth nearly as much to put into cream and beef or to feed sheep and pigs, as they are to sell for sugar. A factory and refinery is being built in Jackson county at Merrillan, and will be in operation this fall, the farmers in that section having already planted the beets for the season's run from October to February. We have in the United States about eight well equipped beet sugar factories and refineries, and wherever they are in operation there is money and prosperity among the people who have anything to do with the process from the field to the factory. And just think of it—it will take 500 factories worth from \$200,000 to \$300,000 each to supply the United States with what sugar it uses, including all the sugar cane mills and plantations in Louisiana. The mind can hardly conceive the far reaching benefit such a stupendous industrial enterprise will bring to our people, in building and operating the plants, helping the iron, steel, coal, copper, lime, brick and other industries, besides the labor in cultivation and transportation of the product. This great economic question will save over a hundred millions of dollars yearly which is sent to foreign countries for our sugar. It will set in circulation more than that amount among the farmers and others who contribute labor and skill in raising the beets and making the finished product—pure, white granulated sugar.

The cost of producing an acre of sugar beets at Lehi, Utah, near the great factory directed by the Dyer's, the pioneers in American beet sugar business, and American beet sugar machinery building, is given by a grower there as follows:

Fall plowing, 12 inches deep	\$2 75
Pulverizing in spring	1 00
Rolling	25
Planting	35
Fifteen pounds of seed at 18 cts.	2 70
Rolling previous to thinning	25
Cultivating previous to thinning	50
Thinning	4 50
Hoeing after thinning	2 00
Furrowing out for irrigation, twice, 25	50

Irrigating twice, at 40 cts	\$ 80
Cultivating after irrigation, twice, 50 cts.....	1 00
Plowing beets out at harvest time.....	1 00
Pulling beets after plow	2 00
Topping 13 tons, at 35 cts.....	4 55
Sacking and hauling 13 tons (3m.), 65 cts.....	8 45
Total expenses	\$33 10
Yield, 13 tons, at \$4 (price paid at Lehi).....	52 00
Net profit per acre	\$18 90

The above figures may, in some instances, be subject to slight changes, but in the aggregate they are correct.

The very conservative estimate of only thirteen tons per acre, is used here, merely to show what sized crop can be made to pay well.

By figuring on a yield of from eighteen to twenty-five tons per acre—which is not at all extravagant—the possibilities of the crop may easily be recognized.

A great number of farmers who raise beets for the Utah Sugar company make a net profit of from \$30 to \$50 per acre, after allowing themselves and family full wages for all work done on the crop.

Here the cost of irrigation could be deducted.

In the Lehi district labor for man and team is estimated at from \$2.50 to \$3.00 per day and \$1.25 to \$1.50 for men and 50 cents to \$1 for boys according to ability.

The average yield for potatoes is not over one hundred bushels per acre; at the present price is it any wonder the agitation for a new agricultural crop, the sugar beet, is proposed. The beet crop does not exhaust the soil like the potato and it will make a good crop for rotation. All the waste or residuum from the factory makes the best of feed for stock and fertilizer for the field.

Therefore, in conclusion we would not ask that the famous "Waupaca Potatoes" which are raised so profusely in central Wisconsin be relegated to the rear, but we would urge that apples and berries and sugar beets, have as many acres devoted to their culture as does the potato. Then will the cry of "hard times" vanish and more happiness and prosperity abound among our people.

President—The subject of currants, gooseberries and raspberries is called for.

Mr. Braadt—I have not had a great deal of experience to give of a very satisfactory nature because I made a mistake in planting. I would say never plant in rows less than seven or eight feet apart. I planted five feet apart and I do not think it is far enough. The most I can get from the acre is 200 16-quart crates. Mr. Smith of Green Bay puts his over six feet apart but that is too close. All I can say about currants is plant them far apart and get a good variety. Do not go into it very heavy at the start.

President—What varieties have you had the most success with?

Mr. Braadt—Old Red Dutch. I have also Victorias. They hang very full but are not as large as my Red Dutch.

President—Have you the true Victoria?

Mr. Braadt—I think I have. They have a very vigorous stem. I like to raise the Castle; it is a very fine currant and yields well. It is possible that I have not the true Victoria, but I think I have.

Mr. Smith—Do you prune your currants annually?

Mr. Braadt—Yes, sir.

President—Raspberries will be our next subject.

Mr. Coe called.

Mr. Coe—So far as I know the raspberries are fine this year. I have not seen a single plantation that was not in good condition. There is a promise of an abundant crop. It is one of the best fruits for Wisconsin horticulturists to grow. I have never seen it fail.

Mr. Kellogg—Did the frosts injure them?

Mr. Coe—Very little.

Mr. Reed—Killed one-half of our buds.

Question—What is your mode of planting?

Mr. Coe—Raspberries must be planted early in the season. The ground must be well and thoroughly prepared. Do not plant too deep.

Mr. Kellogg—Is fall planting for black caps good?

Mr. Coe—I never did it but once (and the success was so marked that I did not do it any more).

Mr. Reed—Is it all right for red ones?

Mr. Coe—Yes, sir.

Question—Three best varieties of red?

Mr. Coe—I would plant Brandywine, Cuthbert and London.

Mr. Reed—Would it not be better to put in the Turner instead of the Cuthbert in some sections?

Mr. Coe—The Cuthbert is too soft, I think. The Marlboro is a good firm berry, but usually with us it is not very successful, rather shy.

Black Caps I prune when they are about 18 inches high. Just pinch off the tips only. Do not wait until they are 2 feet high and then pinch it back to 18 inches, because you will injure the canes. It will injure the plants much if you cut them back when they are 18 inches high. The following spring we cut off the side arms. We leave side branches according to the strength of the cane; when they grow up and start to bend to the ground. If we cut back at the highest point of bend we get the side arms.

Question—Three best varieties?

Mr. Coe—Black Caps—from our own experience: Ohio, Older and Nemaha.

Question—Do you cover up your Black Caps in winter?

Mr. Coe—No, we do not.

Mr. Kellogg—How many young canes do you leave on a hill?

Mr. Coe—As many as grow.

Questions—Do you plant in rows?

Mr. Coe—Yes, we plant in rows, also in rows both ways 6 feet apart—in the row about 3 feet 10 inches. By planting in this way after the spring pruning we can cultivate crosswise, saving a good deal of hand work.

Mr. Coe—About this question of hardiness: I think that our raspberries are hardy or tender according as we make them so. I think that the summer treatment of our raspberries has something to do with their wintering. We culti-

vate frequently up to picking time. When our raspberries are at the hardest work we give them the best care. Cultivate them at least twice during the fruiting time, then the old canes are taken out and burned and cultivation stopped.

Mr. Smith—Don't your bed get full of weeds before fall?

Mr. Coe—No, not very much. Of course little weeds do grow, but we do not get many big weeds later in the season,

Mr. Smith—What is your soil?

Mr. Coe—Sandy and clay loam mixed.

Mr. Herbst—How close do you cultivate?

Mr. Coe—As near as we can. Always shallow.

Mr. Herbst—How many inches do you mean by shallow cultivation?

Mr. Coe—Two or three inches in depth. Of course it is not well to say how deep. In the sucker varieties we cultivate both ways. They get a little too thick sometimes, but we get 8 to 10 canes to the hill.

President—Next topic is blackberries. We would like to hear from Ripon.

President—I have not a very flattering report to make in regard to blackberries, for the outlook for that crop for the present season. The past two seasons' drought has materially used up our blackberry plantations. I should judge that one-half or sixty per cent. have been plowed up, though what canes came through the winter are looking fine and we expect a fair crop of blackberries for the amount of cane.

Question—Any choice of varieties?

President—There are none with us at Ripon.

Mr. Holmes—I would like to ask if the blackberry crop has been injured at Janesville.

Mr. G. J. Kellogg—We never had a finer show for blackberries than we have now. One reason why the bushes are so loaded this year is that the last few years they have borne nothing, but they have now recovered from the drought.

Parsons of Eureka called out.

Question—What is the feature of the blackberry crop for this season?

Mr. Parsons—The prospects for the blackberries and raspberries are very good. Of course during the winter the canes were badly injured, and different growers have different opinions as to what caused the injury. I will say this much, that all plantations I have visited, as well as my own, those canes that are alive are very promising. The new growth is vigorous and shows a healthy root. I have blackberries on my farm that were set out 22 years ago.

Mr. Herbst—I want to say something about finding roots at fence corners and setting them out. We cannot be too careful about knowing what we are planting and keeping them true to name.

Mr. Parsons—I never attended an agricultural or horticultural meeting where someone did not advocate getting berries out of fence corners, etc. I would advise everybody who wishes to plant out small fruits, to visit the local growers here and there and see what does well with them.

Mr. Holmes—I do not advocate getting plants from fence corners, etc., not on general principles.

Mr. Goff—I would like to ask if almost all of our cultivated varieties were not found wild?

Mr. Reed—I just wanted to make the same remark.

Mr. Parsons—About new varieties: I have tried in the past all the new varieties that came out; taken pains and spent money, and I have not yet had one that has been successful, with the exception of the Ancient Briton.

President—In a Bulletin issued by Prof. Bailey, of Cornell, I see that he places the Ancient Briton at the head of the list. It has worked its way eastward and seems to be becoming more popular every season.

Mr. Parsons—Can you tell us anything about the Badger blackberry?

President—I will state that I have had no experience with the Badger; I think Mr. Coe has had.

Mr. Coe—Not very much. We had some that came to us purporting to be Ancient Britons. It resembles the Snyder more than the Briton. I know little of it.

President—Season of ripening?

Mr. Coe—Early. Not very different from the Snyder.

Mr. Parsons—Is it not a fact that it is so like the Snyder that one cannot tell the difference?

Mr. Coe—Yes, I think that is true.

Mr. Herbst—I remember that Mr. Tuttle said it was similar to the Briton.

Mr. Kellogg—I was taken in by the Badger; thought I was getting the Briton. I got the two pretty badly mixed when planting. The bushes are more vigorous than the Snyder; season is about the same. Mr. Tuttle sent out the Badger thinking it was the Briton. A law suit almost followed as the result.

Mrs. Johnson—We have an acre of the Badger, and Mr. Tuttle has several acres and in Duluth they say that the Baraboo Badger is very fine.

Mr. Smith—There is no doubt that there are many good varieties among the seedlings. I would like to ask Mr. Kellogg what is the use—what do we accomplish in multiplying varieties unless you get something better than you now have?

Mr. Kellogg—We must try until we get something better than we now have?

Prof. Goff—I would say that if one wants to make money on berries he must not raise seedlings. If Mr. Loudon produced nothing but the Loudon, it is abundantly worth to us and our posterity what he has done. I do not like the sentiment that is expressed that it is fooling away time and labor to try and get something better than we have had.

Prof. Goff—It is a hindrance to progressive horticulture. Has anyone had any experience with the Bangor berry? I saw it at Sturgeon Bay. It is a dwarf plant. Mr. Stickney was with me at the time and was struck with it and decided to cultivate it for market. It was bearing well and can be protected with half the labor.

Mr. Coe—Some years they have done extremely well. I recommend covering them. You can plant them closer together. They are a long bunch black berry. I have probably now 50 or 60 hills.

Question—Quality?

Answer—Better than any other I ever saw.

Question—Good shipper?

Answer—I think they are.

Mr. Smith—I simply wanted to say that I did not wish to say that I was opposed to the propagation of new seedlings.

Mr. Kellogg—I advise the boys to plant seedlings.

Mr. Philips—I would like to say in regard to seedlings, Mr. Herbst brought out the Sparta by crossing Warfield and Jessie. I feel enthusiastic over the Sparta. I brought some of them here for exhibition and beat John on a premium.

Prof. Goff—Planting seedlings I should advise mashing up the ripe fruit with sand, and planting them at once in a very nicely prepared bed covering with a cloth screen, so long as the sun shines hot. Water every day if necessary, do not let the surface get dry. The leaves should be half grown by autumn. Guard against mice and leave them in the spring until spring. Then supplement the frame by a sash.

Mr. Kellogg—What soil?

Prof. Goff—I would use a light moderately rich sandy loam.

Mr. Reed—Is soil composed of mock equal amount of sand good for strawberries?

Prof. Goff—I would mix some loam with it.

Do you sift your soil?

Prof. Goff—It would be well to do that.

Committee on Resolutions draft following resolutions read by Mrs. Johnson:

Resolved—By the members of the Wisconsin State Horticultural Society, that our thanks are hereby tendered to the Omro Horticultural Society for their earnest, persistent efforts in making this summer meeting one of the best in the history of our society.

Resolved—That our thanks are tendered to those who have furnished the music and literary exercises. Also to all who have furnished papers and taken part in the discussions.

Resolved—That our cordial thanks are extended to the citizens of Omro for their boundless hospitality. We shall carry with us most delightful memories of your pleasant

homes and of the royal way in which you have entertained us. May coming years bring just the amount of heat and cold, of sun and shower, that shall give you "big berries and lots of them."

Mr. Babcock—Allow me in behalf of the Omro Horticultural Society to thank the officers and delegates for their able efforts in entertaining us here in this summer meeting. I wish to announce that there will be a social here this evening for the State Society visitors and friends. We also extend an invitation to the Eureka Society, members and their families.

President—I trust all will try to avail themselves of this opportunity to enjoy the social this evening.

President—Motion to adjourn is now in order.

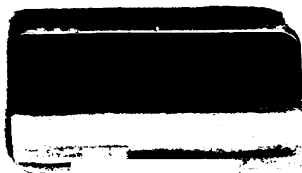
Motion carried.

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